United States Department of Agriculture

NRCS

Natural Resources Conservation Service

In cooperation with the Regents of the University of California and the United States Department of the Interior, Fish and Wildlife Service

Soil Survey of Butte Area, California, Parts of Butte and Plumas Counties

How To Use This Soil Survey

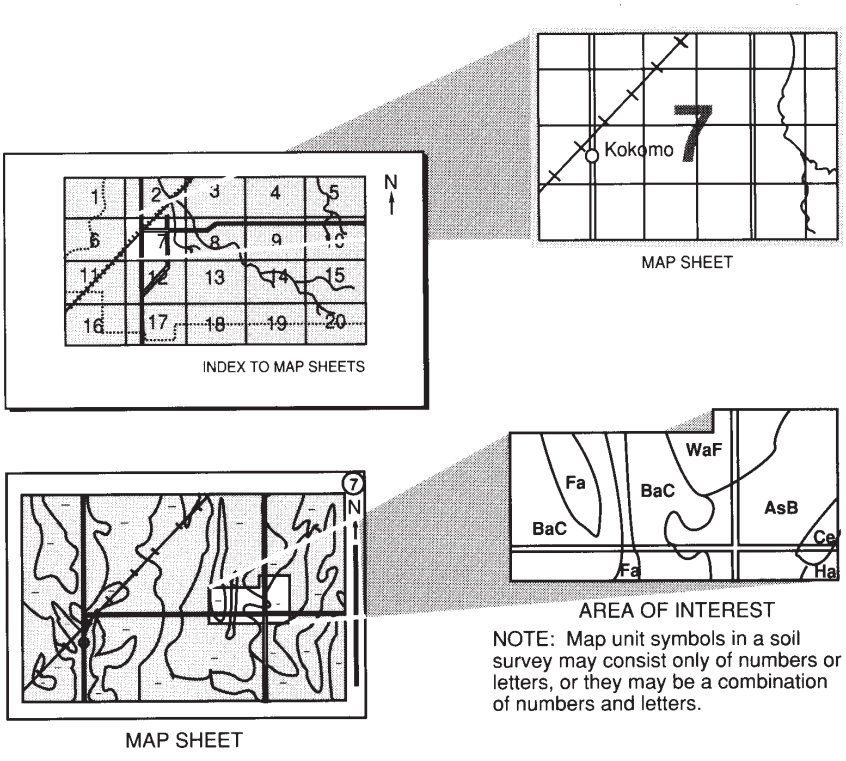
General Soil Map

The general soil map shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas. To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas. To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet. Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service; the Regents of the University of California; and the United States Department of the Interior, Fish and Wildlife Service. The survey is part of the technical assistance furnished to the Butte County, Feather River, and Vina Resource Conservation Districts.

Major fieldwork for this survey was completed in 2001. Soil names and descriptions were approved in 2005. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2001. The most current information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

Soil maps in this survey may be copied without permission. Original soil survey maps were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. The bar scale on each map sheet indicates the proper map measurements.

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Caption for Cover Photo

Big Chico Creek Canyon in the vicinity of Upper Bidwell park. At the right in the foreground is rock outcrop composed of Tuscan mudflow breccia. In the center, Big Chico Creek has cut through an exposure of Lovejoy basalt and created a narrow slot canyon.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

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Foreword

Soil surveys contain information that affects land use planning in survey areas. They include predictions of soil behavior for selected land uses. The surveys highlight soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Soil surveys are designed for many different users. Farmers, ranchers, foresters, and agronomists can use the surveys to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the surveys to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the surveys to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Lincoln E. Burton
State Conservationist
Natural Resources Conservation Service

Soil Survey of Butte Area, California, Parts of Butte and Plumas Counties

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United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with
Regents of the University of California and the United States Department of the Interior, Fish and Wildlife Service

This soil survey updates the “Reconnoissance Soil Survey of the Sacramento Valley, California” (USDA, 1915); the “Soil Survey of the Chico Area, California,” (USDA, 1929); the “Soil Survey of the Oroville Area, California” (USDA, 1930); the “Report for General Soil Map, Butte County, California” (USDA, 1967); and the “Soil-Vegetation Survey” maps and reports published from 1974 through 1981 (California Division of Forestry and Fire Protection). It provides additional coverage and information and has larger maps, which show the soils in greater detail.

The survey area includes parts of Butte and Plumas Counties (fig. 1). It has a total of 930,752 acres, or about 1,454 square miles. It is bordered on the north by Tehama County, on the west by Glenn County, on the southwest by Colusa and Sutter Counties, on the southeast by Yuba County and the Plumas National Forest, and on the northeast by the Lassen National Forest.

General Nature of the Survey Area

This section gives general information about the survey area. It describes physiography, relief, and drainage; history and development; and climate.

Figure 1.—Location of the survey area in California.

Physiography, Relief, and Drainage

The Butte area is within the Great Valley, Sierra Nevada, and Southern Cascades geomorphic provinces. The survey area consists of several physiographic units. These units are the Sacramento Valley, in the western part of the survey area; the Southern Cascade and Sierra Nevada foothills, in the central part; and the Southern Cascade and Sierra Nevada Mountains, in the eastern part.

The *Sacramento Valley* is nearly level and is made up of several distinct landforms. These are the flood plains along the Sacramento and Feather Rivers, basins, alluvial fans, and terraces. Within the survey area, the Sacramento Valley is approximately 10 to 20 miles wide and about 44 miles long. Elevation ranges from 55 feet in the Butte Sink to 495 feet on the terraces east of Oroville. Slow-moving creeks originating in the eastern mountains flow in a southwesterly or southerly direction through the Sacramento Valley and terminate at either the Sacramento River or the Feather River. Generally, there is little runoff throughout the area because slopes are nearly level. Flood plains naturally have bar-and-channel topography because of alternating periods of sediment deposition and removal by floodwater. Most areas have been leveled for agricultural production because of the excellent soil properties on the flood plains. All areas of the alluvial sediment that builds up to form the flood plains are internally drained. Floodwaters pass over the top of the flood plains. When the water level in the main channel recedes, the water on the flood plains drains readily in most areas. The Butte Basin naturally was internally drained, but it is now artificially drained by canals and ditches that serve to provide both drainage and irrigation for rice production. The alluvial fans are depositional landforms with very deep, well drained soils that allow water to readily percolate downward through the profile; therefore, runoff is negligible. Because of manipulation of creeks for flood control and irrigation supply, most creeks presently flow through the alluvial fans in one well defined channel. Little sediment is deposited on the adjacent surface. The alluvial terraces are nearly level to hilly and have mound-swale microtopography. The soils are underlain by

either a duripan or densic material; therefore, drainage is restricted and the soils are seasonally saturated. Runoff can be very high.

The *Southern Cascade foothills* are very distinctive as compared with the Sierra Nevada foothills. Though not officially recognized at the major land resource area (MLRA) level as a separate part of the foothills, the Southern Cascade foothills have a quite different topography. The Southern Cascade foothills in the survey area consist of a repeating pattern of nearly level to moderately sloping ridges interrupted by moderately sloping to very steep canyon slopes and canyon bottoms. Elevation ranges from 160 to 2,595 feet. This landscape is about 8 to 12 miles wide and about 24 miles long and has ridges and canyons trending towards the southwest. The ridges consist mainly of mudflow breccia, volcanic sandstone, and volcanic conglomerate making up the Tuscan Formation and originating from Mount Yana (Lydon, 1968). Cohasset Ridge is the one exception. It consists of Cohasset basalt. Canyons are the result of downcutting of the Tuscan Formation by streams over the last million years. From north to south, the main ridges are Keefer, Cohasset, Musty Buck, Doemill, Coon, McKay, Perkins, and Morgan and the main canyons are Sheephollow, Cabin Hollow, Nance, Nugen, Hamlin, Hayes, Berry, Cory, and Horsethief. The Southern Cascade foothills are drained by numerous creeks, including Pine, Rock, Mud, Sycamore, Big Chico, Little Chico, Butte, Little Butte, Little Dry, Clear, and Dry Creeks.

The *Sierra Nevada foothills* are south of the Southern Cascade foothills. The survey area includes the most northerly portion of the Sierra Nevada foothills, which extend south for approximately 360 miles. The landscape occurs at the west-side toe of the fault-block Sierra Nevada Mountain Range and consists of gently sloping to very steep, dissected hills and some deeply dissected river canyons. This landscape is approximately 6 to 16 miles wide and 18 miles long within the survey area. Elevation ranges from about 245 to 2,600 feet.

Local geology has the greatest influence on the topography and determines the trend of slopes and drainage. Table Mountain is made up of Lovejoy basalt and occurs as a gently sloping, slightly tilted basalt plateau with a relatively flat top interrupted by nearly vertical cliffs and canyons on the west side. The canyons formed during times of much greater precipitation. Water flowing across the basalt plateau reached the edge, cascaded over the cliff, and cut into soft sediments of the Ione Formation. The Ione sediment was washed away from underneath the basalt, which eventually became unsupported and tumbled below. The plateau is cutting slowly backward, forming the canyon. In the area that is on the green schist portion of the Smartville Formation (Shiffman and Wagner, 1992), ridges are oriented from north to slightly southeast. Areas on the Bald Rock and Swedesflat plutons tend to have little overall orientation and are dissected in nearly every direction.

Most of the streams flow from the east towards the southwest. The waters of Lake Oroville hide the deeply dissected canyons of the North, Middle, and South Forks of the Feather River. The natural river bottom lies approximately 600 feet below the water at Oroville Dam when the lake is at full capacity.

The *Southern Cascade Mountains* are generally north of the Sierra Nevada Mountains. Volcanic flows have flowed over the top of, or buried, the Sierra Nevada Mountains. The survey area includes the most southerly extension of the Southern Cascade Mountains, which extend north about 150 miles and terminate near the California-Oregon border. The Southern Cascade Mountains consist of gently sloping to strongly sloping ridges interrupted by moderately steep to very steep canyon side slopes and narrow canyon bottoms. Slopes in the canyons are generally complex, and slopes on the ridgetops tend to appear smooth to rolling when observed from a distance. This landscape is about 14 to 20 miles wide and about 4 to 10 miles long. Elevation ranges from about 1,200 to 5,700 feet. Ridges and canyons are oriented from the north to the southwest. From north to south, the main ridges are Cohasset, Musty Buck, Doemill, Portuguese Point, Carpenter, Nimshew, and Paradise. The

bedrock in this area includes Pliocene-age volcanic rocks, such as mudflow breccia, andesite, and some basalt. The area is drained by Big Chico, Little Chico, and Butte Creeks and their tributaries.

The *Sierra Nevada Mountains* are south of the Southern Cascade Mountains and include the most northerly portion of the Sierra Nevada Mountain Range. The rest of the range extends south for about 340 miles. The survey area occurs entirely on the west slope, which is characterized by a system of ridges and associated canyons and some mountain valleys. This mountainous relief has complex slopes, ranging from gently sloping ridgetops to very steep slopes that commonly exceed 70 percent in canyons. The Sierra Nevada is considered a fault-block mountain range, which means that when tectonic or fault activity takes place, the entire range moves as one block. This kind of movement is the explanation for the long, gently sloping west slope and the abrupt escarpment of the east slope. The landscape is about 16 to 18 miles wide and about 36 miles long. Elevation ranges from about 1,400 to 6,100 feet within the survey area. Because of high amounts of precipitation, much of it occurring as snow, runoff is high. Many tributary creeks drain the area, and most flow quickly downstream to become major rivers, such as the West Branch and North, Middle, and South Forks of the Feather River. The watershed that is drained is huge, and most of the water is captured in Lake Oroville and used by the State Water Project, which provides water for both domestic and agricultural uses for much of the State.

The bedrock of the Sierra Nevada is quite variable and includes intrusive igneous rocks, such as quartz diorite, diorite, and gabbro on plutons; metamorphic rocks, such as metasediments, green schist, conglomerate, and various metavolcanic rocks; and extrusive igneous rocks, such as basalt, andesite, and mudflows on ridgetops. At the highest elevations, glacial till is made up of both intrusive and extrusive igneous rocks.

History and Development

Prepared by Robert E. Colby, Historian, Magalia, California.

Archaeological evidence indicates that some 13,000 years ago people were living in what became California. Apparently, the Northeastern Maidu were among these earliest residents. These early people seldom traveled more than a few miles from where they were born because they had all the essentials for their way of life close at hand.

Butte County now covers the traditional lands the Konkow, commonly known as Maidu, Northwestern Maidu, or Konkow Maidu. Various villages made for a rich diversity of tribes speaking many different dialects and having diverse lifestyles, material cultures, social customs, and political organizations. For millennia, the indigenous people in this area used the wide array of the county's flora and fauna as sources of food, medicine, basketry, weapons, tools, games, shelter, and ceremonial items, generating a long-term history with the land. This enduring connection between the Maidu and plants not only conserved plant populations but also preserved desirable characteristics of individual plants. The people managed plant mosaics on a large scale, to attract wild game, to minimize potential catastrophic fires, and to provide a diversity of food crops. Maidu descendants from these villages still gather in and tend wild areas in Butte County, adhering to ancient rules and techniques that allow resource use while keeping the resource base intact.

As Euro-American settlers multiplied, forces of change grew steadily and affected all aspects of the traditional indigenous culture and lifestyle. Many individuals were forced to move into the new non-Indian settlements, and the population of the indigenous people plummeted through disease, genocide, starvation, and warfare. In spite of their losses, the indigenous people have maintained their distinct ethnic identity and have taken steps in the political, economic, and social rebuilding and

restoration of the original people of the region. Given the great obstacles the people have had to face, the continuance of the Maidu traditions is remarkable.

In 1808, Gabriel Moraga and Spanish soldiers were the first Europeans to see the buttes rising from the valley floor for which the county would later be named. In 1820, Louis G. Arguello, exploring for the Governor of Spanish California, arrived in the Oroville area, where he named the Rio de Las Plumas, or Feather, River. He chose this name because of the quantity of wildfowl feathers floating on the surface.

Apparently, the first Americans to arrive in the survey area were Jedediah Smith and a party of trappers in 1827 and 1828. They trapped as far north as Butte and Chico Creeks before heading on into Oregon. In 1829, trappers from the American Fur Company and the Hudson's Bay Company apparently reached this area from the north as far as the Sutter Buttes.

In 1843, John Bidwell, who became Butte County's most notable resident, traveled throughout the area while in the employ of John Sutter. Bidwell was so taken by what he saw around Chico Creek that he mapped the various streams and canyons. In 1849 and 1850, he purchased part of a Spanish Land Grant called the "Rancho Arroyo del Chico," over 22,000 acres along Chico Creek. By 1847, Bidwell had established an extensive farm. In 1860, he founded the town of Chico on his property. By 1844, Sam Neal, another Butte County pioneer, had received the Esquon Land Grant, along Butte Creek, from the Mexican Government of California.

John Bidwell is credited as being the first to find gold on the banks of the Feather River, near what would become the town of Hamilton. This discovery occurred in 1848, and Bidwell followed the river upstream to what became Bidwell's Bar. He made his fortune at this location and began the Gold Rush in what would be called the Northern Mines. He used part of the gold he mined to purchase the Chico ranch. Shortly after Bidwell's strike, there were numerous gold camps along the branches of the river, and flour soon cost $800 a barrel.

Butte County was one of the original 27 California counties formed in 1850. It originally extended from the Sacramento River to the California-Nevada border and was about four times larger than the approximate 1,700 square miles it is today. In the middle of the 1850s, all of Plumas County was carved out of Butte County and other parts were given to Tehama, Lassen, Colusa, and Sutter Counties. Ironically, the Sutter Buttes, for which Butte County is named, are no longer in the county.

By the early 1850s, the Gold Rush for the individual miner was mostly over. All the "easy pickin's" were gone, and most miners had to find work with operations that had the financing to mine on a large scale. Most of the early gold camps were gone. Some resurrected themselves, as did the 1849 camp of Ophir, which was incorporated as Oroville in 1856. In the election of 1850, Bidwell's Bar became the county seat. There was an acrimonious debate about the county seat with the town of Hamilton and then for decades between Oroville and Chico. In 1853, the "Butte Record," the county's first newspaper, was published at Bidwell's Bar.

Gold mining put Butte County on the map. On February 18, 1898, the "Chico Record" stated that between 1848 and 1898 "more than $200,000,000 (in gold) have been taken out of Butte County's placer gravel and quartz mines." It is estimated that as much as 10 million dollars worth of gold was recovered in 1848 alone. The 54-pound Dogtown nugget was the most notable find in 1859. Dogtown-Magalia was one of the most prolific placer and drift mining areas in the State. Forbestown and Concow were hard rock mining areas. Butte Creek was mainly placer deposits. It was eventually dredged. Bidwell's Bar and most of the Feather River, including Ophir-Oroville, were known for placer deposits. Although diamonds were found in its gold-bearing gravel, Cherokee was most famous as a hydraulic mine.

A very efficient way to mine gold on a large scale, hydraulic mining started about 1858. Farmlands were inundated by the "slickins" (debris), and navigation on rivers as big as the Sacramento was impaired. This form of mining was so strictly regulated by

1883 that it virtually disappeared. Butte County had numerous hydraulic mines, the most notable being the Cherokee mine. Starting in 1870, the Spring Valley Mining Company constructed a vast network of ditches and flumes, one 30 miles long, to bring water to the 18 monitors that shot water 400 feet into gold-bearing gravel, washing debris into 3 miles of sluice boxes from which the gold was picked. Four million gallons of water were used each day. Ditches to carry water to the mines were nothing new in the county. The county had 167 miles of ditches by 1861 and 400 miles by 1877. Many of the ditches would be used later to carry water for agriculture and hydroelectric power generation. In 1877, the first crude gold dredge was used in the Feather River. By the early 1900s, this was the dominant method of mining on the rivers and creeks in the county.

The Chinese came to Butte County during the Gold Rush, approximately 10,000 coming to Oroville alone. As elsewhere within the gold fields of California, they proved to be diligent miners, more so than many of the other miners. Many later worked on the various trans-Sierra railroads.

As mines and early towns appeared in 1849, so did a crude system of roads. By 1851, there were established routes used by stages, teamsters, and the ordinary citizens. One of the earliest roads was the Beckwourth Trail, which came from the California-Nevada border through the American Valley and over the Sierra Nevada to Bidwell's Bar. Highway 162 follows the general route today. In 1855, local citizens built Bidwell's Bar Bridge over the Middle Fork of the Feather River. Shipped around the Horn in pieces, this was the first suspension bridge in California. Ironically, the bridge was built about the time that Bidwell's Bar declined and mining, as well as the newspaper, moved downstream to Ophir-Oroville. Streets were laid out in Chico in 1860, and the Marysville-Shasta Stage Road established scheduled travel between central and northern California and Oregon. Shallow-draft steamboats traveled the Sacramento River by 1862, making stops in Butte County. The Humboldt Road was opened from Chico to mines in Nevada and Idaho in 1865. In 1870, the California and Oregon Railroad reached Chico from the north and continued south to Marysville and beyond. The California Northern Railroad came northward from Marysville to Oroville. In 1906, the Western Pacific Railroad started construction of a rail line through the canyon of the North Fork of the Feather River, and passenger service began in 1910. Construction on the Feather River Highway through the canyon started in 1928, and the road was opened in 1937.

Except for the larger land grants in the valley that raised wheat, hay, and cattle, agriculture was of limited importance until the 1860s. It was found, though, that the soils of the county supported many of the crops that grow in California, including grains of all kinds, citrus fruits, olives, almonds, grapes, berries, melons, sugar beets, hops, and flax. The adobe soils around Nelson produced large amounts of wheat and other grains, and from 1850 to 1870, this area was a major producer of grains. An olive orchard was planted in the 1870s near Wyandotte, and the number of orchards increased in the Oroville area through the 1890s. The olive industry really did not "blossom" until Mrs. Freda Ehmann moved to Oroville in 1893. Starting with 20 acres of olive trees near Marysville, she built an olive growing and canning business in Oroville that shipped her olives throughout California, the nation, and the world.

The citrus industry began in the middle of the 1850s. The famous Mother Orange Tree was planted next to Bidwell's Bar Bridge in 1856-57. Contrary to local folklore, this tree did not produce the first orange grown in California and may have been of only minor importance in the eventual growth of the orange industry in the county. In 1884, the Thermolito Citrus Colony was started on 10,000 acres west of Oroville. It was irrigated by water from the Miocene Canal, a mining ditch dating back to 1875. Oranges from the Oroville area were the first citrus shipped from California. Rice became an important crop in 1918.

By the 1950s, agriculture had become the county's principal source of income. Oranges, rice, apples, peaches, olives, figs, grapes, almonds, honey, and vegetables from truck farms were the primary products. The earliest residents of the foothill ridges had their vegetable gardens and a few pear, peach, and apple trees. These fruits were not grown for sale, however, until the 1880s. Eventually, hundreds of acres were devoted to raising them, especially apples. By the late 1960s, the apple business was in decline because of changing markets and the rapid growth of year-round sources in Washington and Oregon.

The late 1890s saw the beginning of hydroelectric power generation with the formation of several local power and light companies. By 1900, several powerhouses on local creeks were supplying power to Butte County residents and to such distant cities as San Francisco. In 1905, the Pacific Gas & Electric Company was formed with the Butte County system, which then served much of central California. The Butte County system became a major part of the new company. In 1908, Great Western Power built the Big Bend powerhouse, which was a foundation for a system of hydroelectric power plants on the North Fork of the Feather River. It eventually became part of the Pacific Gas & Electric Company. The last project of any significance was construction of the Oroville Dam, which, at 770 feet, is the highest earthen dam in the United States. Construction was completed in 1967. Hydroelectric power generation really was of secondary importance, as the 3.5 million acre feet of water impounded in Lake Oroville were critical to the State Water Project, which supplied areas as far away as southern California.

In 1908, the county led California in gold production. By 1900, however, the lumber industry was rapidly becoming more important. During the Gold Rush, numerous small sawmills cut so much lumber for mining and for building the numerous camps and small towns that the surrounding hills were denuded of trees. As early as 1860, 13 sawmills produced more than 14 million board feet of pine lumber. Numerous companies supplied lumber in the 1870s, 1880s, and 1890s. In 1901, the eastern-based Diamond Match Company bought 69,000 acres of prime timber land (later increased to 300,000 acres) in Butte, Plumas, and Tehama Counties. In 1902, it built a sawmill and a company town named Stirling City. By 1906, it had built the Butte County Railroad, which connected the mill with the company's match factory in Chico. By the time it ceased logging operations in 1958, the sawmill had produced 1,809,000,000 board feet of lumber. The other large lumber producer, the Swayne Lumber Company, was located in the Feather Falls area.

Climate

Prepared by the National Water and Climate Center, Natural Resources Conservation Service, Portland, Oregon.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Oroville (elevation of 170 feet), the Chico Experiment Station (elevation of 190 feet), Paradise (elevation of 1,750 feet), De Sabla (elevation of 2,710 feet), and Strawberry Valley (elevation of 3,810 feet) for the period 1971 to 2000. The Strawberry Valley station is located just outside the survey area, in Yuba County. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

During winter at elevations below 1,500 feet, the average temperature is 46.5 degrees F and the average daily minimum temperature is 36.2 degrees. The lowest temperature on record, which occurred at the Chico Experiment Station on December 11, 1932, is 11 degrees. In summer, the average temperature is 75.4 degrees and the average daily maximum temperature is 91.9 degrees. The highest temperature, which occurred at the Chico Experiment Station on July 15, 1972, is 117 degrees.

During winter at elevations above 1,500 feet, the average temperature is 39.8 degrees F and the average daily minimum temperature is 29.8 degrees. The lowest temperature on record, which occurred at Strawberry Valley on December 21, 1990, is 4 degrees. In summer, the average temperature is 64.8 degrees and the average daily maximum temperature is 80.4 degrees. The highest temperature, which occurred at Strawberry Valley on September 4, 1955, is 103 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

At elevations below 1,500 feet, the average annual precipitation is 25.69 inches, as represented by the Chico Experiment Station gauge. Of this, about 12.42 inches, or 48 percent, usually falls in the period March through November. The growing season for most crops falls within this period. The heaviest 1-day rainfall on record is 5.73 inches. It occurred at the Chico Experiment Station on January 3, 1916. Thunderstorms occur on about 4.7 days each year, and most occur in March.

At elevations above 1,500 feet, the representative average annual total precipitation is more than 50 inches. The highest annual total, at Strawberry Valley, is 80.98 inches. Of the 80.98 inches, about 10.98 inches, or nearly 14 percent, usually falls in the period May through October and is very representative of the precipitation at elevations above 1,500 feet. The growing season for most crops falls within this period. The heaviest 1-day rainfall on record is 1.75 inches. It occurred at Strawberry Valley on January 31, 1963.

The seasonal snowfall ranges from 0.2 inch at the Chico Experiment Station (elevation of 190 feet) to 96.6 inches at Strawberry Valley (elevation 3,810 of feet). Paradise represents a transition between the low and high elevations in the survey area. It has an average annual snowfall of about 2.8 inches. The maximum snowfall at Paradise, 17.5 inches, occurred on January 29, 1975. The greatest snow depth at any one time on record is 100 inches. It occurred on January 17, 1952, at Strawberry Valley. On the average at Strawberry Valley, 50 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 39 inches. It occurred on January 30, 1968. Spring snowmelt from the snowpack at the higher elevations in the survey area is very important to irrigation in spring and summer.

The average relative humidity in midafternoon is about 45 percent. Humidity is higher at night, and the average at dawn is about 83 percent. The sun shines 96 percent of the time possible in summer and 48 percent in winter. The prevailing wind is from the south-southwest. Average windspeed is highest, 9.5 miles per hour, in June.

The climate data the sections "General Soil Map Units," "Detailed Soil Map Units," and "Classification of the Soils" are from data and maps prepared by Jim Goodridge, Climatologist, Chico, California. The maps were used exclusively to determine the ranges of precipitation, mean annual air temperature, and frost-free days assigned to detailed map units and to taxonomic units. Figure 2 is a map of mean annual precipitation, figure 3 is a map of mean annual air temperature, and figure 4 is a map of frost-free days.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness and shape of the slopes, the general pattern of drainage, the kinds of crops and native plants, and the kinds of bedrock. They dug many holes to study the soil profile, which is the

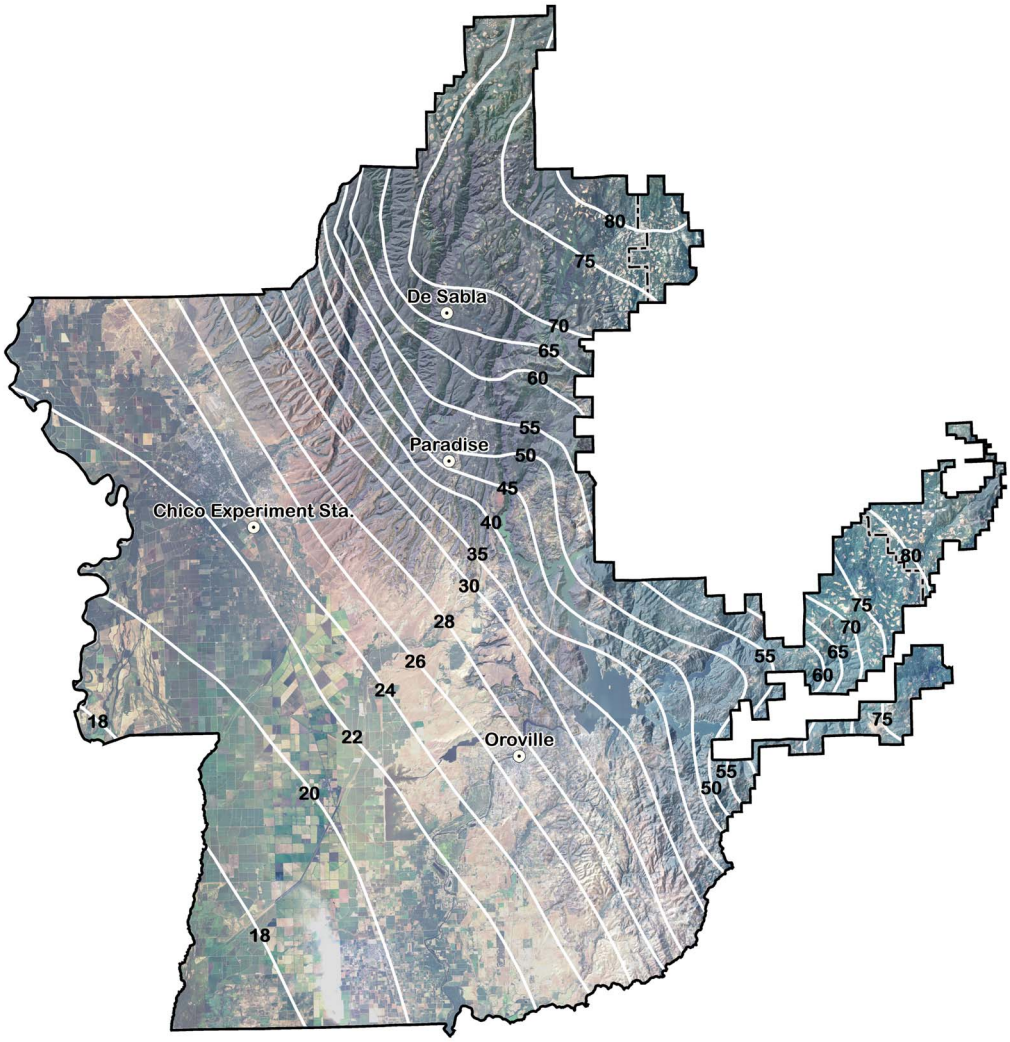


Figure 2.—Mean annual precipitation in inches (based on the 30-year period from 1951 to 1980).

sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil may have formed. The unconsolidated material is devoid of roots and other living organisms and has been minimally changed by other biological activity.

The soils and miscellaneous areas in the survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an

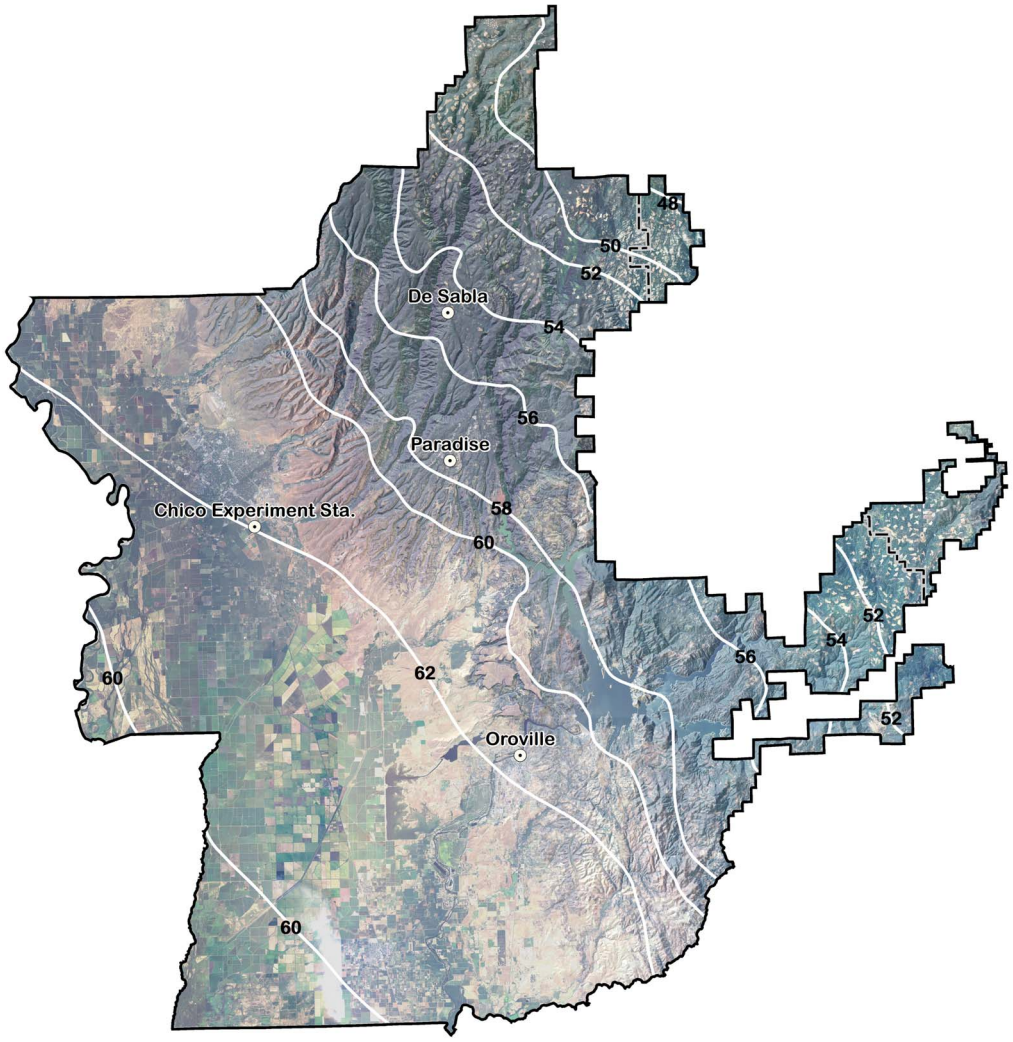


Figure 3.—Mean annual air temperature in degrees F.

understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret

the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

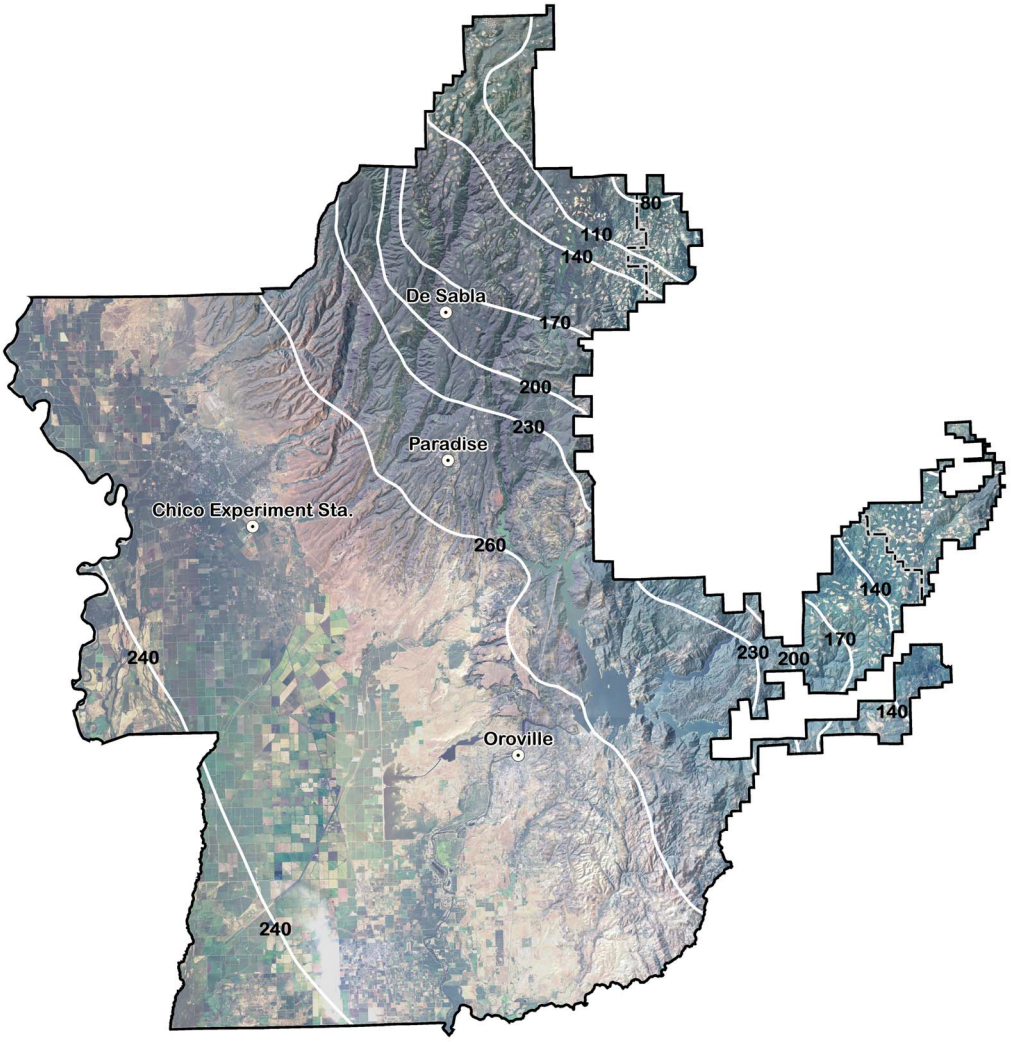


Figure 4.—Frost-free days (above 32 degrees F).

This survey area was mapped at two levels of detail. At the more detailed level, map units are narrowly defined. Map unit boundaries were plotted and verified at closely spaced intervals. At the less detailed level, map units are broadly defined. Boundaries were plotted and verified at wider intervals. The detail of mapping was selected to meet the anticipated long-term use of the survey, and the map units were designed to meet the needs for that use. The soils in the part of the survey area in the Sacramento Valley were mapped at the more detailed level. The soils in the foothills and mountains were mapped at the less detailed level.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those in the adjacent survey areas. They do not fully agree with those in the surveys of Glenn County, California, and Tehama County, California, mainly because the fieldwork for the adjacent surveys was conducted at a different time. They do not fully agree with those in the resource surveys of the Lassen National Forest and the Plumas National Forest because mapping of these forests was conducted for a different purpose and was completed at a less detailed level. Differences also result from a better knowledge of soils, variations in technical standards and terminology, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

General Soil Map Units

The general soil map in this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Thermic Soils on Flood Plains in the Sacramento Valley

1. Parrott-Gianella-Farwell

Very deep, nearly level, moderately well drained soils that formed in Sacramento River alluvium; on flood plains

Setting

Landscape: Sacramento Valley
Slope range: 0 to 2 percent
Typical vegetation: Walnut and almond orchards, valley oak, Fremont cottonwood, and coyotebrush

Composition

Extent of the map unit: 3.7 percent
Extent of the components in the map unit:
Parrott—34 percent
Gianella—27 percent
Farwell—9 percent
Minor components—30 percent

Soil Properties

Parrott
Depth class: Very deep
Drainage class: Moderately well drained
Geomorphic position: Bars on flood plains outside the meander belt
Parent material: Silty alluvium derived from mixed rock sources
Particle-size class: Fine-silty

Soil temperature regime: Thermic
Slope: 0 to 2 percent

Gianella
Depth class: Very deep
Drainage class: Moderately well drained
Geomorphic position: Bars on flood plains inside the meander belt
Parent material: Sandy alluvium derived from mixed rock sources
Particle-size class: Coarse-loamy
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Farwell
Depth class: Very deep
Drainage class: Moderately well drained
Geomorphic position: Outer edge of flood plains
Parent material: Loamy alluvium derived from mixed rock sources
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Minor Components

- Columbia and Columbia taxadjunct soils in channels inside the meander belt on flood plains
- Vermet soils in channels outside the meander belt on flood plains
- Riverwash on gravel bars along the river channel

Use and Management

Major uses: Orchard crops, wildlife habitat, and watershed
Management concerns: Flooding

2. Xerorthents, Tailings-Gianella

Very deep, nearly level to steep, moderately well drained to somewhat excessively drained soils that formed in Feather River and Butte Creek alluvium; on flood plains and stream terraces

Setting

Landscape: Sacramento Valley
Slope range: 0 to 50 percent
Typical vegetation: Valley oak, Fremont cottonwood, sycamore, willow, and walnut orchards

Composition

Extent of the map unit: 2 percent
Extent of the components in the map unit:
Xerorthents, tailings—48 percent
Gianella—35 percent
Minor components—17 percent

Soil Properties

Xerorthents, tailings
Depth class: Very deep
Drainage class: Moderately well drained to somewhat excessively drained
Geomorphic position: Dredger tailings on flood plains and stream terraces

Parent material: Cobbly, gravelly, and sandy alluvium derived from mixed rock sources
Particle-size class: Sandy and sandy-skeletal
Soil temperature regime: Thermic
Slope: 0 to 50 percent

Gianella
Depth class: Very deep
Drainage class: Moderately well drained
Geomorphic position: Flood plains
Parent material: Sandy alluvium derived from mixed rock sources
Particle-size class: Coarse-loamy
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Minor Components

- Urban land in the city of Oroville
- Columbia soils on flood plains
- Riverwash on gravel bars along river and stream channels

Use and Management

Major uses: Wildlife habitat, recreation, orchard crops, and watershed
Management concerns: Flooding and a high content of rock fragments

Thermic Soils in Flood Basins in the Sacramento Valley

3. Lofgren-Blavo

Deep and moderately deep, nearly level, poorly drained soils that formed in alluvium; in flood basins

Setting

Landscape: Sacramento Valley (fig. 5)
Slope range: 0 to 1 percent
Typical vegetation: Rice, *Carex*, spikerush, swampgrass. willow, and cottonwood; valley oak in areas adjacent to Butte Creek

Composition

Extent of the map unit: 4.9 percent
Extent of the components in the map unit:
Lofgren—43 percent
Blavo—39 percent
Minor components—18 percent

Soil Properties

Lofgren
Depth class: Deep
Drainage class: Poorly drained
Geomorphic position: Central flood basins
Parent material: Clayey alluvium over cemented alluvium derived from mixed rock sources
Particle-size class: Very-fine
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Figure 5.—A freshly tilled rice field in a flood basin in an area of Lofgren and Blavo soils. This landform is typical of general soil map units 3 through 6. The town of Richvale is in the background.

Blavo
Depth class: Moderately deep
Drainage class: Poorly drained
Geomorphic position: Central flood basins
Parent material: Clayey alluvium over cemented alluvium derived from mixed rock sources
Particle-size class: Very-fine
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Minor Components

- Oxyaquic Xerofluvents clay in flood basins
- Clear Lake soils in flood basins

Use and Management

Major uses: Grain crops, hunting, wildlife habitat, and watershed
Management concerns: Flooding, ponding, wetness, and a high content of clay

4. Esquon-Neerdobe

Deep and moderately deep, nearly level, poorly drained soils that formed in alluvium; in flood basins

Setting

Landscape: Sacramento Valley (fig. 5)
Slope range: 0 to 1 percent
Typical vegetation: Rice, Italian ryegrass, curly dock, and spikerush

Composition

Extent of the map unit: 8.6 percent
Extent of the components in the map unit:
Esquon—46 percent
Neerdobe—23 percent
Minor components—31 percent

Soil Properties

Esquon
Depth class: Deep
Drainage class: Poorly drained
Geomorphic position: Outer flood basins
Parent material: Clayey alluvium over cemented alluvium derived from mixed rock sources
Particle-size class: Fine
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Neerdobe
Depth class: Moderately deep
Drainage class: Poorly drained
Geomorphic position: Outer flood basins
Parent material: Clayey alluvium over cemented alluvium derived from mixed rock sources
Particle-size class: Fine
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Minor Components

- Edjobe soils on basin rims
- Dodgeland and Whitecabin soils in flood basins

Use and Management

Major uses: Grain crops, hunting, wildlife habitat, and watershed
Management concerns: Ponding, wetness, and a high content of clay

5. Bosquejo-Galt

Very deep and moderately deep, nearly level, somewhat poorly drained and poorly drained soils that formed in alluvium; in flood basins

Setting

Landscape: Sacramento Valley (fig. 5)
Slope range: 0 to 1 percent
Typical vegetation: Safflower; wheat; alfalfa; sugar beet, prune, and almond orchards; and annual grasses and forbs

Composition

Extent of the map unit: 1.2 percent
Extent of the components in the map unit:
Bosquejo—74 percent
Galt—11 percent
Minor components—15 percent

Soil Properties

Bosquejo
Depth class: Very deep
Drainage class: Somewhat poorly drained
Geomorphic position: Interfan basins
Parent material: Clayey alluvium derived from volcanic rocks
Particle-size class: Fine
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Galt
Depth class: Moderately deep
Drainage class: Poorly drained
Geomorphic position: Interfan basins over low terrace remnants
Parent material: Clayey alluvium over cemented alluvium derived from volcanic rocks
Particle-size class: Fine
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Minor Components

- Bosquejo silt loam, overwash, on margins between flood basins and flood plains

Use and Management

Major uses: Row crops, orchard crops, and watershed
Management concerns: Wetness, ponding, a high content of clay, and depth to a duripan

6. Gridley Taxadjunct-Subaco Taxadjunct

Moderately deep, nearly level, somewhat poorly drained and poorly drained soils that formed in alluvium; on low terraces and in flood basins

Setting

Landscape: Sacramento Valley (fig. 5)
Slope range: 0 to 2 percent
Typical vegetation: Pasture grasses, rice, and willows

Composition

Extent of the map unit: 2.8 percent
Extent of the components in the map unit:
Gridley taxadjunct—52 percent
Subaco taxadjunct—25 percent
Minor components—23 percent

Soil Properties

Gridley taxadjunct
Depth class: Moderately deep
Drainage class: Somewhat poorly drained
Geomorphic position: Low terraces
Parent material: Loamy alluvium over clayey alluvium over cemented alluvium derived from mixed rock sources
Particle-size class: Fine

Soil temperature regime: Thermic
Slope: 0 to 2 percent

Subaco taxadjunct
Depth class: Moderately deep
Drainage class: Poorly drained
Geomorphic position: Flood basins
Parent material: Clayey alluvium over cemented alluvium derived from mixed rock sources
Particle-size class: Fine
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Minor Components

- Liveoak taxadjunct soils on low fan terraces
- Galt taxadjunct soils on low fan terraces
- Calcic Haploxerolls on knolls on low terraces

Use and Management

Major uses: Irrigated pasture, grain crops, wildlife habitat, homesite development, and watershed
Management concerns: Wetness, ponding, alkalinity, and calcium carbonate content

Thermic Soils on Alluvial Fans in the Sacramento Valley

7. Olashes

Very deep, nearly level, well drained soils that formed in alluvium; on alluvial fans

Setting

Landscape: Sacramento Valley
Slope range: 0 to 2 percent
Typical vegetation: Almond and prune orchards (fig. 6), rice, and beans

Composition

Extent of the map unit: 0.1 percent
Extent of the components in the map unit:
Olashes—85 percent
Minor components—15 percent

Soil Properties

Olashes
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Alluvial fans
Parent material: Loamy alluvium derived from volcanic rocks
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 0 to 2 percent

Minor Components

- Oswald soils on basin rims
- Subaco soils in flood basins

Figure 6.—An almond orchard in an area of Almendra soils on an alluvial fan. This landform is typical of general soil map units 7 through 9.

Use and Management

Major uses: Orchard crops, row crops, homesite development, and watershed
Management concerns: Sandy substratum

8. Conejo-Almendra-Vina

Very deep, nearly level, well drained soils that formed in alluvium; on alluvial fans

Setting

Landscape: Sacramento Valley
Slope range: 0 to 1 percent
Typical vegetation: Almond and walnut orchards (fig. 6), valley oak, and annual grasses and forbs

Composition

Extent of the map unit: 5.4 percent
Extent of the components in the map unit:
Conejo—23 percent
Almendra—22 percent
Vina—13 percent
Minor components—42 percent

Soil Properties

Conejo
Depth class: Very deep

Drainage class: Well drained
Geomorphic position: Distal alluvial fans
Parent material: Loamy alluvium derived from mixed rock sources
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Almendra
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Alluvial fans
Parent material: Loamy alluvium derived from mixed rock sources
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Vina
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Proximal alluvial fans
Parent material: Sandy alluvium derived from mixed rock sources
Particle-size class: Coarse-loamy
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Minor Components

- Busacca soils on distal alluvial fans
- Chico soils on low fan terraces
- Charger soils on proximal alluvial fans

Use and Management

Major uses: Orchard crops and urban development
Management concerns: None

9. Haploxerolls-Durixerolls

Deep and moderately deep, nearly level, moderately well drained and somewhat poorly drained soils that formed in alluvium; on alluvial fans

Setting

Landscape: Sacramento Valley
Slope range: 0 to 2 percent
Typical vegetation: Almond and prune orchards (fig. 6), wheat, alfalfa, and safflower

Composition

Extent of the map unit: 1.2 percent
Extent of the components in the map unit:
Haploxerolls—63 percent
Durixerolls—15 percent
Minor components—22 percent

Soil Properties

Haploxerolls
Depth class: Deep
Drainage class: Moderately well drained

Geomorphic position: Alluvial fans
Parent material: Loamy alluvium over cemented alluvium derived from volcanic rocks
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 0 to 2 percent

Durixerolls
Depth class: Moderately deep
Drainage class: Somewhat poorly drained
Geomorphic position: Alluvial fans
Parent material: Loamy alluvium over cemented alluvium derived from volcanic rocks
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 0 to 2 percent

Minor Components

- Busacca soils on distal alluvial fans
- Almendra soils on alluvial fans
- Galt soils in flood basins

Use and Management

Major uses: Orchard crops, row crops, hay crops, and urban development
Management concerns: Wetness and depth to a duripan

Thermic Soils That Formed in Cascade Alluvium; on Fan Terraces in the Sacramento Valley

10. Redsluff-Redtough-Redswale

Very deep, shallow, and very shallow, nearly level to steep, moderately well drained, somewhat poorly drained, and poorly drained soils that formed in alluvium; on fan terraces (fig. 7)

Setting

Landscape: Sacramento Valley
Slope range: 0 to 35 percent
Typical vegetation: Annual grasses and forbs

Composition

Extent of the map unit: 2.8 percent
Extent of the components in the map unit:
Redsluff—21 percent
Redtough—19 percent
Redswale—10 percent
Minor components—50 percent

Soil Properties

Redsluff
Depth class: Very deep
Drainage class: Moderately well drained
Geomorphic position: Low fan terraces
Parent material: Loamy alluvium over gravelly alluvium derived from mixed rock sources

Figure 7.—Mound and swale topography on a terrace in an area of general soil map unit 10. The soils are underlain by a duripan. Livestock grazing is the main use of this unit.

Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 0 to 2 percent

Redtough
Depth class: Shallow
Drainage class: Somewhat poorly drained
Geomorphic position: Mounds on high fan terraces
Parent material: Loamy alluvium over cemented, gravelly alluvium derived from volcanic rocks
Particle-size class: Loamy
Soil temperature regime: Thermic
Slope: 0 to 35 percent

Redswale
Depth class: Very shallow
Drainage class: Poorly drained
Geomorphic position: Swales on high fan terraces
Parent material: Loamy alluvium over cemented, gravelly alluvium derived from volcanic rocks
Particle-size class: Loamy
Soil temperature regime: Thermic
Slope: 0 to 2 percent

Minor Components

- Wafap soils on low stream terraces
- Munjar soils on intermediate fan terraces
- Anita soils in swales and on flats on fan terraces

Use and Management

Major uses: Livestock grazing, urban development, wildlife habitat, and watershed
Management concerns: Wetness and depth to a duripan

Thermic Soils on Feather River Terraces in the Sacramento Valley

11. Liveoak-Boga-Loemstone

Very deep and deep, nearly level, moderately well drained soils that formed in Feather River alluvium; on terraces

Setting

Landscape: Sacramento Valley
Slope range: 0 to 2 percent
Typical vegetation: Walnut, prune, kiwi, peach, and nectarine orchards; valley oak; and annual grasses and forbs

Composition

Extent of the map unit: 1.6 percent
Extent of the components in the map unit:
Liveoak—32 percent
Boga—28 percent
Loemstone—25 percent
Minor components—15 percent

Soil Properties

Liveoak
Depth class: Very deep
Drainage class: Moderately well drained
Geomorphic position: Distributary channels on Feather River terraces
Parent material: Loamy alluvium derived from mixed rock sources
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 0 to 2 percent

Boga
Depth class: Very deep
Drainage class: Moderately well drained
Geomorphic position: Feather River terraces
Parent material: Loamy alluvium over dense, silty alluvium derived from mixed rock sources
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Loemstone
Depth class: Deep
Drainage class: Moderately well drained
Geomorphic position: Feather River terraces
Parent material: Loamy alluvium over dense, silty alluvium derived from mixed rock sources
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Minor Components

- Gridley taxadjunct soils on low terraces
- Tisdale and Marcum soils on terraces

Use and Management

Major uses: Orchard crops and urban development
Management concerns: Wetness and a dense substratum

Thermic Soils That Formed in Sierra Nevada Alluvium; on Low Fan Terraces in the Sacramento Valley

12. Eastbiggs-Duric Xerarents-Kimball

Moderately deep, shallow, and very deep, nearly level, somewhat poorly drained and well drained soils that formed in alluvium; on low terraces

Setting

Landscape: Sacramento Valley
Slope range: 0 to 3 percent
Typical vegetation: Annual grasses and forbs, rice, prune orchards, and valley oak

Composition

Extent of the map unit: 3 percent
Extent of the components in the map unit:
Eastbiggs—38 percent
Duric Xerarents—14 percent
Kimball—11 percent
Minor components—37 percent

Soil Properties

Eastbiggs
Depth class: Moderately deep
Drainage class: Somewhat poorly drained
Geomorphic position: Mounds on low terraces
Parent material: Loamy alluvium over clayey alluvium over cemented alluvium derived from mixed rock sources
Particle-size class: Fine
Soil temperature regime: Thermic
Slope: 0 to 3 percent

Duric Xerarents
Depth class: Shallow
Drainage class: Somewhat poorly drained
Geomorphic position: Leveled low terraces
Parent material: Clayey alluvium over cemented alluvium derived from mixed rock sources
Particle-size class: Fine
Soil temperature regime: Thermic
Slope: 0 to 1 percent

Kimball
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Low terraces
Parent material: Loamy alluvium over clayey alluvium over loamy alluvium derived from mixed rock sources
Particle-size class: Fine
Soil temperature regime: Thermic
Slope: 1 to 3 percent

Minor Components

- Galt soils in basins and swales on low terraces
- Wilsoncreek soils on bars on low stream terraces
- Trainer soils in channels on low stream terraces

Use and Management

Major uses: Livestock grazing, grain crops, orchard crops, wildlife habitat, and watershed
Management concerns: Wetness and depth to a duripan

Thermic Soils That Formed in Sierra Nevada Alluvium; on Intermediate and High Fan Terraces in the Sacramento Valley

13. Thompsonflat-Oroville-Vistarobles

Very deep, moderately deep, and shallow, nearly level to moderately steep, moderately well drained and poorly drained soils that formed in alluvium; on intermediate and high fan terraces

Setting

Landscape: Sacramento Valley
Slope range: 0 to 30 percent
Typical vegetation: Annual grasses and forbs, blue oak, interior live oak, buckbrush, toyon, and whiteleaf manzanita

Composition

Extent of the map unit: 4 percent
Extent of the components in the map unit:
Thompsonflat—28 percent
Oroville—18 percent
Vistarobles—10 percent
Minor components—44 percent

Soil Properties

Thompsonflat
Depth class: Very deep
Drainage class: Moderately well drained
Geomorphic position: High fan terraces
Parent material: Loamy alluvium over clayey alluvium over gravelly alluvium derived from mixed rock sources
Particle-size class: Fine-loamy

Soil temperature regime: Thermic
Slope: 0 to 30 percent

Oroville
Depth class: Moderately deep
Drainage class: Poorly drained
Geomorphic position: Swales on intermediate fan terraces
Parent material: Loamy alluvium over clayey alluvium over cemented alluvium derived from mixed rock sources
Particle-size class: Fine
Soil temperature regime: Thermic
Slope: 0 to 9 percent

Vistarobles
Depth class: Shallow
Drainage class: Poorly drained
Geomorphic position: Swales on intermediate fan terraces
Parent material: Loamy alluvium over clayey alluvium over cemented alluvium derived from mixed rock sources
Particle-size class: Clayey
Soil temperature regime: Thermic
Slope: 0 to 9 percent

Minor Components

- Redding and Thermalito soils on mounds on intermediate fan terraces
- Fernandez soils on intermediate fan terraces

Use and Management

Major uses: Livestock grazing, urban development, wildlife habitat, and watershed
Management concerns: Wetness and depth to a duripan

Thermic Soils on Lovejoy Basalt and Ione Sediments on Sierra Nevada Foothills

14. Palexerults-Rock Outcrop, Basalt-Coalcanyon

Exposed bedrock and very deep, nearly level to very steep, well drained soils that formed in colluvium and residuum; on foothills

Setting

Landscape: Sierra Nevada foothills (fig. 8)
Slope range: 2 to 50 percent
Typical vegetation: Annual grasses and forbs, lichens, interior live oak, blue oak, and valley oak

Composition

Extent of the map unit: 1.8 percent
Extent of the components in the map unit:
Palexerults—18 percent
Rock outcrop—15 percent
Coalcanyon—15 percent
Minor components—52 percent

Figure 8.—Typical landscape and vegetation in an area of general soil map unit 14. Pictured is Fern Falls on Table Mountain.

Soil Properties

Palexerults
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on foothills
Parent material: Loamy colluvium derived from volcanic rocks over clayey residuum derived from Ione Formation claystone
Particle-size class: Fine-loamy and fine
Soil temperature regime: Thermic
Slope: 2 to 50 percent

Rock outcrop
Geomorphic position: Tops and cliffs on basalt plateaus
Kind of rock: Lovejoy basalt
Slope: 2 to 200 percent

Coalcanyon
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Side slopes on basalt plateaus
Parent material: Gravelly colluvium derived from Lovejoy basalt
Particle-size class: Loamy-skeletal

Soil temperature regime: Thermic
Slope: 5 to 50 percent

Minor Components

- Thermalrocks soils on tops of basalt plateaus
- Coonhollow soils on side slopes of basalt plateaus
- Campbellhills soils in fractures on tops of basalt plateaus

Use and Management

Major uses: Livestock grazing, wildlife habitat, and watershed
Management concerns: Soil slumping, depth to bedrock, and content of rock fragments

Thermic Soils on Strath Terraces on Volcanic Cascade Foothills

15. Tuscan-Clearhayes-Typic Xerofluvents

Shallow, deep, and very deep, nearly level, somewhat poorly drained and well drained soils that formed in alluvium; on strath terraces (fig. 9)

Setting

Landscape: Cascade foothills
Slope range: 0 to 2 percent
Typical vegetation: Annual grasses and forbs, cottonwood, sycamore, black walnut, and valley oak

Composition

Extent of the map unit: 2.7 percent
Extent of the components in the map unit:
Tuscan—9 percent
Clearhayes—8 percent
Typic Xerofluvents—7 percent
Minor components—76 percent

Soil Properties

Tuscan
Depth class: Shallow
Drainage class: Somewhat poorly drained
Geomorphic position: Mounds on high strath terraces on volcanic foothills
Parent material: Loamy alluvium over clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks
Particle-size class: Clayey
Soil temperature regime: Thermic
Slope: 0 to 3 percent

Clearhayes
Depth class: Deep
Drainage class: Somewhat poorly drained

Figure 9.—Typical landscape and vegetation in an area of general soil map unit 15.

Geomorphic position: Bars on low strath terraces on volcanic foothills
Parent material: Loamy overbank deposits over gravelly channel deposits derived from volcanic rocks
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 0 to 2 percent

Typic Xerofluvents
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Stream terraces on volcanic foothills
Parent material: Sandy alluvium derived from hydraulic mine deposition
Particle-size class: Coarse-loamy and sandy-skeletal
Soil temperature regime: Thermic
Slope: 0 to 2 percent

Minor Components

- Wickscorner soils on fan terraces below Table Mountain
- Fallager soils in swales on high strath terraces
- Duric Xerarents on leveled strath terraces

Use and Management

Major uses: Livestock grazing, wildlife habitat, and watershed
Management concerns: Depth to a duripan, depth to bedrock, and wetness

Thermic Soils on Volcanic Cascade Foothills

16. Lucksev-Butteside-Carhart

Very shallow, shallow, and moderately deep, nearly level to steep, moderately well drained and poorly drained soils that formed in alluvium, residuum, and colluvium; on foothills

Setting

Landscape: Cascade foothills
Slope range: 2 to 35 percent
Typical vegetation: Annual grasses and forbs; blue oak at the higher elevations

Composition

Extent of the map unit: 1.5 percent
Extent of the components in the map unit:
Lucksev—31 percent
Butteside—27 percent
Carhart—21 percent
Minor components—21 percent

Soil Properties

Lucksev
Depth class: Very shallow and shallow
Drainage class: Moderately well drained
Geomorphic position: Ridgetops, side slopes, and strath terraces on volcanic foothills
Parent material: Loamy alluvium over clayey alluvium, residuum, and colluvium derived from volcanic rocks
Particle-size class: Clayey
Soil temperature regime: Thermic
Slope: 2 to 35 percent

Butteside
Depth class: Moderately deep
Drainage class: Moderately well drained
Geomorphic position: Side slopes and strath terraces on volcanic foothills
Parent material: Loamy alluvium over clayey alluvium, residuum, and colluvium derived from volcanic rocks
Particle-size class: Fine
Soil temperature regime: Thermic
Slope: 2 to 35 percent

Carhart
Depth class: Moderately deep
Drainage class: Poorly drained
Geomorphic position: Basins and footslopes on volcanic foothills
Parent material: Clayey alluvium derived from volcanic rocks
Particle-size class: Fine
Soil temperature regime: Thermic
Slope: 0 to 12 percent

Minor Components

- Anita taxadjunct soils in basins and side slopes on foothills

Use and Management

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Management concerns: Depth to bedrock, wetness, and a high content of clay

17. Doemill-Jokerst

Shallow and very shallow, nearly level to moderately steep, somewhat poorly drained and poorly drained soils that formed in residuum; on foothills

Setting

Landscape: Cascade foothills
Slope range: 0 to 30 percent
Typical vegetation: Annual grasses and forbs and scattered blue oak

Composition

Extent of the map unit: 1.8 percent
Extent of the components in the map unit:
Doemill—44 percent
Jokerst—39 percent
Minor components—17 percent

Soil Properties

Doemill
Depth class: Shallow
Drainage class: Somewhat poorly drained
Geomorphic position: Mounds and planar areas on ridgetops, strath terraces, and side slopes on volcanic foothills
Parent material: Loamy residuum derived from volcanic mudflow breccia
Particle-size class: Loamy
Soil temperature regime: Thermic
Slope: 0 to 30 percent

Jokerst
Depth class: Very shallow
Drainage class: Poorly drained
Geomorphic position: Swales and planar areas on ridgetops, strath terraces, and side slopes on volcanic foothills
Parent material: Loamy residuum derived from volcanic mudflow breccia
Particle-size class: Loamy
Soil temperature regime: Thermic
Slope: 0 to 30 percent

Minor Components

- Typic Haploxeralfs on side slopes on foothills
- Carhart taxadjunct soils in basins on strath terraces on foothills

Use and Management

Major uses: Livestock grazing, urban development, wildlife habitat, and watershed
Management concerns: Wetness and depth to bedrock

18. Xerorthents, Shallow-Typic Haploxeralfs-Doemill

Very shallow, shallow, moderately deep, and deep, nearly level to very steep, moderately well drained, well drained, and somewhat poorly drained soils that formed in colluvium, residuum, and alluvium; on foothills

Setting

Landscape: Cascade foothills
Slope range: 2 to 100 percent
Typical vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, and manzanita

Composition

Extent of the map unit: 5 percent
Extent of the components in the map unit:
Xerorthents, shallow—22 percent
Typic Haploxeralfs—15 percent
Doemill—6 percent
Minor components—57 percent

Soil Properties

Xerorthents, shallow
Depth class: Very shallow and shallow
Drainage class: Moderately well drained
Geomorphic position: Side slopes in canyons in volcanic foothills
Parent material: Loamy colluvium, residuum, and alluvium derived from volcanic rocks
Particle-size class: Loamy, clayey, loamy-skeletal, clayey-skeletal
Soil temperature regime: Thermic
Slope: 2 to 50 percent

Typic Haploxeralfs
Depth class: Moderately deep and deep
Drainage class: Well drained
Geomorphic position: Side slopes in canyons in volcanic foothills
Parent material: Loamy colluvium, residuum, and alluvium derived from volcanic rocks
Particle-size class: Fine-loamy, fine, loamy-skeletal, clayey-skeletal
Soil temperature regime: Thermic
Slope: 2 to 50 percent

Doemill
Depth class: Shallow
Drainage class: Somewhat poorly drained
Geomorphic position: Ridgetops on volcanic foothills
Parent material: Loamy residuum derived from volcanic mudflow breccia
Particle-size class: Loamy
Soil temperature regime: Thermic
Slope: 3 to 15 percent

Minor Components

- Chinacamp soils on side slopes in canyons in foothills
- Jokerst soils on ridgetops on foothills
- Ultic Haploxeralfs, conglomerate, on side slopes in canyons in foothills
- Coridge soils on ridgetops of basalt flows in foothills

Use and Management

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Management concerns: Slope and depth to bedrock

Thermic Soils on Metamorphic Sierra Nevada Foothills

19. Dunstone-Loafercreek-Argonaut Taxadjunct

Shallow and moderately deep, nearly level to moderately steep, well drained soils that formed in residuum and colluvium; on foothills

Setting

Landscape: Sierra Nevada foothills
Slope range: 1 to 30 percent
Typical vegetation: Annual grasses and forbs and blue oak (fig. 10)

Composition

Extent of the map unit: 2.8 percent
Extent of the components in the map unit:
Dunstone—44 percent
Loafercreek—14 percent
Argonaut taxadjunct—11 percent
Minor components—31 percent

Soil Properties

Dunstone
Depth class: Shallow
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic foothills
Parent material: Loamy residuum and colluvium derived from metavolcanic rocks
Particle-size class: Loamy
Soil temperature regime: Thermic
Slope: 1 to 30 percent

Loafercreek
Depth class: Moderately deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic foothills
Parent material: Loamy residuum and colluvium derived from metavolcanic rocks
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 1 to 30 percent

Argonaut taxadjunct
Depth class: Moderately deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic foothills
Parent material: Clayey residuum and colluvium derived from metavolcanic rocks
Particle-size class: Fine
Soil temperature regime: Thermic
Slope: 2 to 30 percent

Figure 10.—Blue oak and annual grasses in an area of general soil map unit 19. The landscape is typical of the low Sierra Nevada foothills.

Minor Components

- Katskillhill and Sunnyslope soils on ridgetops and side slopes on foothills
- Rock outcrop on ridgetops and side slopes on foothills

Use and Management

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Management concerns: Depth to bedrock

20. Dunstone-Loafercreek-Oroshore

Shallow and moderately deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on foothills

Setting

Landscape: Sierra Nevada foothills
Slope range: 2 to 90 percent
Typical vegetation: Annual grasses and forbs, interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, and toyon

Composition

Extent of the map unit: 3.1 percent
Extent of the components in the map unit:
Dunstone—29 percent
Loafercreek—19 percent
Oroshore—13 percent
Minor components—39 percent

Soil Properties

Dunstone
Depth class: Shallow
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic foothills
Parent material: Loamy residuum and colluvium derived from metavolcanic and metasedimentary rocks
Particle-size class: Loamy
Soil temperature regime: Thermic
Slope: 2 to 90 percent

Loafercreek
Depth class: Moderately deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic foothills
Parent material: Loamy residuum and colluvium derived from metavolcanic rocks
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 2 to 90 percent

Oroshore
Depth class: Moderately deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic foothills
Parent material: Loamy residuum and colluvium derived from metasedimentary rocks
Particle-size class: Loamy-skeletal
Soil temperature regime: Thermic
Slope: 3 to 70 percent

Minor Components

- Mounthope soils on ridgetops and side slopes on foothills
- Dystroxerepts and Haploxeralfs on very steep canyon backslopes in foothills

Use and Management

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Management concerns: Slope and depth to bedrock

21. Mounthope-Hartsmill

Very deep and deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on foothills

Setting

Landscape: Sierra Nevada foothills
Slope range: 2 to 90 percent

Typical vegetation: Whiteleaf manzanita, buckbrush, toyon, annual grasses and forbs, interior live oak, Pacific madrone, foothill pine, and scattered ponderosa pine

Composition

Extent of the map unit: 1 percent
Extent of the components in the map unit:
Mounthope—35 percent
Hartsmill—28 percent
Minor components—37 percent

Soil Properties

Mounthope
Depth class: Deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic foothills
Parent material: Loamy residuum and colluvium derived from metavolcanic rocks
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 2 to 90 percent

Hartsmill
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic foothills
Parent material: Loamy residuum and colluvium derived from metavolcanic rocks
Particle-size class: Loamy-skeletal
Soil temperature regime: Thermic
Slope: 2 to 90 percent

Minor Components

- Dunstone and Sommeyflat soils on ridgetops and side slopes on foothills

Use and Management

Major uses: Homesite development, watershed, and wildlife habitat
Management concerns: Slope

22. Ultic Haploxeralfs, Thermic, High Terrace

Moderately deep and deep, nearly level to moderately steep, moderately well drained soils that formed in alluvium; on high terraces

Setting

Landscape: Sierra Nevada foothills
Slope range: 2 to 30 percent
Typical vegetation: Annual grasses and forbs, blue oak, foothill pine, and whiteleaf manzanita

Composition

Extent of the map unit: 0.5 percent
Extent of the components in the map unit:
Ultic Haploxeralfs, thermic, high terrace—95 percent
Minor components—5 percent

Soil Properties

Ultic Haploxeralfs, thermic, high terrace
Depth class: Moderately deep and deep
Drainage class: Moderately well drained
Geomorphic position: High terraces
Parent material: Loamy alluvium over gravelly alluvium derived from mixed sources
Particle-size class: Fine-loamy and loamy-skeletal
Soil temperature regime: Thermic
Slope: 2 to 30 percent

Minor Components

- Dunstone and Loafercreek soils on ridgetops and side slopes on foothills

Use and Management

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Management concerns: Wetness, rock fragments, and slope

Thermic Soils on Plutons on Sierra Nevada Foothills

23. Flanly-Swedesflat-Parkshill

Moderately deep, shallow, and very deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on foothills

Setting

Landscape: Sierra Nevada foothills (fig. 11)
Slope range: 2 to 50 percent
Typical vegetation: Annual grasses and forbs, interior live oak, blue oak, foothill pine, and buckbrush

Composition

Extent of the map unit: 2.3 percent
Extent of the components in the map unit:
Flanly—36 percent
Swedesflat—19 percent
Parkshill—12 percent
Minor components—33 percent

Soil Properties

Flanly
Depth class: Moderately deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on plutons in foothills
Parent material: Loamy residuum and colluvium derived from quartz diorite
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 2 to 50 percent

Swedesflat
Depth class: Shallow

Figure 11.—A typical area on plutons in the Sierra Nevada foothills. This landscape is typical of general soil map units 23 and 24. Stringtown Mountain and Lake Oroville are in the background.

Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on plutons in foothills
Parent material: Loamy residuum and colluvium derived from quartz diorite
Particle-size class: Loamy
Soil temperature regime: Thermic
Slope: 2 to 30 percent

Parkshill
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on plutons in foothills
Parent material: Sandy residuum and colluvium derived from quartz diorite or gabbro
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 2 to 15 percent

Minor Components

- Rackerby soils on side slopes on foothills
- Hurleton and Sommeyflat soils on ridgetops on foothills

Use and Management

Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Management concerns: Slope and depth to bedrock

24. Crystalhill-Oregongulch-Craigsaddle

Very deep, moderately deep, and deep, nearly level to very steep, somewhat excessively drained and well drained soils that formed in residuum and colluvium; on foothills

Setting

Landscape: Sierra Nevada foothills (fig. 11)
Slope range: 2 to 70 percent
Typical vegetation: Whiteleaf manzanita, toyon, annual grasses and forbs, interior live oak, canyon live oak, Pacific madrone, foothill pine, and scattered ponderosa pine

Composition

Extent of the map unit: 2.4 percent
Extent of the components in the map unit:
Crystalhill—24 percent
Oregongulch—14 percent
Craigsaddle—14 percent
Minor components—48 percent

Soil Properties

Crystalhill
Depth class: Very deep
Drainage class: Somewhat excessively drained
Geomorphic position: Ridgetops and side slopes on plutons in foothills
Parent material: Sandy residuum and colluvium derived from intrusive igneous rocks
Particle-size class: Coarse-loamy
Soil temperature regime: Thermic
Slope: 2 to 70 percent

Oregongulch
Depth class: Moderately deep
Drainage class: Somewhat excessively drained
Geomorphic position: Ridgetops and side slopes on plutons in foothills
Parent material: Sandy residuum and colluvium derived from intrusive igneous rocks
Particle-size class: Coarse-loamy
Soil temperature regime: Thermic
Slope: 2 to 70 percent

Craigsaddle
Depth class: Deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on plutons in foothills
Parent material: Loamy residuum and colluvium derived from intrusive igneous rocks
Particle-size class: Fine-loamy
Soil temperature regime: Thermic
Slope: 2 to 70 percent

Minor Components

- Sommeyflat, Mounthope, and Forbestown soils on side slopes on foothills

Use and Management

Major uses: Wildlife habitat, watershed, and homesite development
Management concerns: Depth to bedrock, slope, and erodibility

Mesic Soils on Volcanic Cascade Foothills

25. Rockstripe-Ultic Haploxeralfs, Mesic-Ultic Haploxeralfs

Very shallow, moderately deep, and deep, nearly level to very steep, somewhat poorly drained and well drained soils that formed in residuum and colluvium; on foothills

Setting

Landscape: Cascade foothills
Slope range: 2 to 100 percent
Typical vegetation: Buckbrush, scrub oak, manzanita, annual grasses and forbs, interior live oak, canyon live oak, California black oak, and foothill pine

Composition

Extent of the map unit: 3.7 percent
Extent of the components in the map unit:
Rockstripe—33 percent
Ultic Haploxeralfs, mesic—25 percent
Ultic Haploxeralfs—22 percent
Minor components—20 percent

Soil Properties

Rockstripe
Depth class: Very shallow
Drainage class: Somewhat poorly drained
Geomorphic position: Ridgetops and side slopes in canyons in volcanic foothills
Parent material: Loamy residuum derived from volcanic mudflow breccia
Particle-size class: Loamy-skeletal
Soil temperature regime: Mesic
Slope: 2 to 100 percent

Ultic Haploxeralfs, mesic
Depth class: Moderately deep and deep
Drainage class: Well drained
Geomorphic position: Ridgetops and shoulder slopes on volcanic foothills
Parent material: Loamy residuum derived from volcanic rocks
Particle-size class: Fine-loamy, fine, loamy-skeletal, clayey-skeletal
Soil temperature regime: Mesic
Slope: 2 to 30 percent

Ultic Haploxeralfs
Depth class: Moderately deep and deep
Drainage class: Well drained
Geomorphic position: Side slopes in canyons in volcanic foothills
Parent material: Loamy colluvium derived from volcanic rocks
Particle-size class: Fine-loamy and loamy-skeletal
Soil temperature regime: Mesic
Slope: 30 to 100 percent

Minor Components

- Rock outcrop, cliffs, on canyon backslopes in foothills

Use and Management

Major uses: Homesite development, wildlife habitat, and watershed
Management concerns: Slope and depth to bedrock

Mesic Soils on Metamorphic Sierra Nevada Foothills

26. Bigridge-Minniecreek

Deep and moderately deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on foothills

Setting

Landscape: Sierra Nevada foothills
Slope range: 2 to 70 percent
Typical vegetation: Whiteleaf manzanita, toyon, interior live oak, Pacific madrone, canyon live oak, foothill pine, ponderosa pine, and poison oak

Composition

Extent of the map unit: 0.3 percent
Extent of the components in the map unit:
Bigridge—50 percent
Minniecreek—35 percent
Minor components—15 percent

Soil Properties

Bigridge
Depth class: Deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic foothills
Parent material: Loamy residuum and colluvium derived from metavolcanic rocks
Particle-size class: Fine-loamy
Soil temperature regime: Mesic
Slope: 2 to 70 percent

Minniecreek
Depth class: Moderately deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic foothills
Parent material: Loamy residuum and colluvium derived from metavolcanic rocks
Particle-size class: Fine-loamy
Soil temperature regime: Mesic
Slope: 2 to 70 percent

Minor Components

- Mounthope soils, Hartsmill soils, and Rock outcrop on ridgetops and side slopes on foothills

Use and Management

Major uses: Homesite development, wildlife habitat, watershed, and limited timber production
Management concerns: Slope and depth to bedrock

Mesic Soils on Volcanic Cascade Mountains

27. Paradiso-Schott-Tusccoll

Very deep and deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Cascade Mountains
Slope range: 2 to 70 percent
Typical vegetation: Ponderosa pine, Douglas-fir, sugar pine, incense cedar, California black oak, deerbrush, and whiteleaf manzanita

Composition

Extent of the map unit: 3.9 percent
Extent of the components in the map unit:
Paradiso—50 percent
Schott—20 percent
Tusccoll—9 percent
Minor components—21 percent

Soil Properties

Paradiso
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops on volcanic plateaus
Parent material: Clayey residuum derived from volcanic rocks
Particle-size class: Fine
Soil temperature regime: Mesic
Slope: 2 to 30 percent

Schott
Depth class: Deep
Drainage class: Well drained
Geomorphic position: Ridgetops and canyon side slopes on volcanic plateaus
Parent material: Loamy residuum and colluvium derived from volcanic mudflow breccia
Particle-size class: Loamy-skeletal
Soil temperature regime: Mesic
Slope: 3 to 50 percent

Tusccoll
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Backslopes in canyons in volcanic plateaus
Parent material: Loamy colluvium derived from volcanic rocks
Particle-size class: Fine-loamy
Soil temperature regime: Mesic
Slope: 30 to 70 percent

Minor Components

- Rock outcrop on ridgetops and side slopes on volcanic plateaus
- Mountyana soils on ridgetops on volcanic plateaus
- Lydon soils on ridgetops and side slopes on volcanic plateaus

Use and Management

Major uses: Homesite development, timber production, wildlife habitat, and watershed
Management concerns: Slope and depth to bedrock

28. Mountyana-Beecee-Lydon

Very deep and moderately deep, nearly level to very steep, well drained and somewhat excessively drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Cascade Mountains (fig. 12)
Slope range: 2 to 100 percent
Typical vegetation: Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak, tanoak, deerbrush, canyon live oak, and Pacific poison oak

Composition

Extent of the map unit: 2.6 percent
Extent of the components in the map unit:
Mountyana—36 percent
Beecee—28 percent

Figure 12.—Big Chico Creek Canyon in an area of general soil map unit 28. The landscape and vegetation are characteristic of areas in the Cascade Mountains. The Sierra Nevada Mountains are in the background.

Lydon—12 percent
Minor components—24 percent

Soil Properties

Mountyana
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops on volcanic plateaus
Parent material: Loamy residuum derived from volcanic mudflow breccia
Particle-size class: Fine-loamy
Soil temperature regime: Mesic
Slope: 2 to 30 percent

Beecee
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Backslopes in canyons in volcanic plateaus
Parent material: Loamy colluvium derived from volcanic rocks
Particle-size class: Medial-skeletal
Soil temperature regime: Mesic
Slope: 30 to 70 percent

Lydon
Depth class: Moderately deep
Drainage class: Somewhat excessively drained
Geomorphic position: Ridgetops and side slopes on volcanic plateaus
Parent material: Sandy residuum and colluvium derived from volcanic mudflow breccia
Particle-size class: Loamy-skeletal
Soil temperature regime: Mesic
Slope: 2 to 100 percent

Minor Components

- Rock outcrop on ridgetops and side slopes on volcanic plateaus
- Paradiso soils on ridgetops on volcanic plateaus
- Schott soils on ridgetops and side slopes on volcanic plateaus

Use and Management

Major uses: Timber production, wildlife habitat, and watershed
Management concerns: Slope and depth to bedrock

29. Redbone

Deep, nearly level to moderately steep, well drained soils that formed in residuum; on mountains

Setting

Landscape: Cascade Mountains (fig. 13)
Slope range: 3 to 30 percent
Typical vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, incense cedar, Sierra chinquapin, and greenleaf manzanita

Figure 13.—A road-cut exposure of Redbone soils.

Composition

Extent of the map unit: 0.6 percent
Extent of the components in the map unit:
Redbone—71 percent
Minor components—29 percent

Soil Properties

Redbone
Depth class: Deep
Drainage class: Well drained
Geomorphic position: Ridgetops on volcanic plateaus
Parent material: Loamy residuum derived from volcanic mudflow breccia
Particle-size class: Medial over loamy-skeletal
Soil temperature regime: Mesic
Slope: 3 to 30 percent

Minor Components

- Lydon and Mountyana soils on ridgetops on volcanic plateaus
- Endoaquolls in meadows in mountain valleys

Use and Management

Major uses: Timber production, wildlife habitat, and watershed
Management concerns: Depth to bedrock

Mesic Soils on Metamorphic Sierra Nevada Mountains

30. Surnuf-Griffgulch-Typic Haploxeralfs, Magnesic

Very deep, deep, and moderately deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains
Slope range: 3 to 80 percent
Typical vegetation: Ponderosa pine, Douglas-fir (fig. 14), foothill pine, California black oak, canyon live oak, tanoak, whiteleaf manzanita, toyon, and poison oak

Composition

Extent of the map unit: 3.5 percent
Extent of the components in the map unit:
Surnuf—25 percent
Griffgulch—10 percent
Typic Haploxeralfs, magnesic—8 percent
Minor components—57 percent

Figure 14.—This view of the metamorphic mountain landscape is representative of general soil map unit 30. The vegetation is dominated by ponderosa pine and Douglas-fir.

Soil Properties

Surnuf
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Clayey residuum and colluvium derived from metavolcanic rocks
Particle-size class: Fine
Soil temperature regime: Mesic
Slope: 3 to 70 percent

Griffgulch
Depth class: Deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Clayey residuum and colluvium derived from metavolcanic rocks
Particle-size class: Clayey-skeletal
Soil temperature regime: Mesic
Slope: 3 to 70 percent

Typic Haploxeralfs, magnesic
Depth class: Moderately deep to very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Clayey residuum and colluvium derived from serpentinite
Particle-size class: Clayey-skeletal
Soil temperature regime: Mesic
Slope: 3 to 80 percent

Minor Components

- Bigridge and Millerridge soils on ridgetops and side slopes on mountains
- Surnuf taxadjunct soils on ridgetops and side slopes on mountains

Use and Management

Major uses: Timber production, homesite development, wildlife habitat, and watershed
Management concerns: All three soils—depth to bedrock, surface stones, and slope; Typic Haploxeralfs, magnesic—calcium magnesium imbalance

31. Toadtown-Powellton-Rogerville

Very deep and deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains
Slope range: 2 to 70 percent
Typical vegetation: Ponderosa pine, Douglas-fir, sugar pine, incense cedar, white fir, California black oak, tanoak, Pacific madrone, Pacific dogwood, and deerbrush

Composition

Extent of the map unit: 4.3 percent
Extent of the components in the map unit:
Toadtown—27 percent
Powellton—15 percent

Rogerville—8 percent
Minor components—50 percent

Soil Properties

Toadtown
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Clayey residuum and colluvium derived from metamorphic rocks
Particle-size class: Fine
Soil temperature regime: Mesic
Slope: 3 to 70 percent

Powellton
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Loamy residuum and colluvium derived from metamorphic rocks
Particle-size class: Fine-loamy
Soil temperature regime: Mesic
Slope: 3 to 70 percent

Rogerville
Depth class: Deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Clayey residuum and colluvium derived from ultramafic rocks
Particle-size class: Fine
Soil temperature regime: Mesic
Slope: 2 to 70 percent

Minor Components

- Dixmine and Hietanen soils on ridgetops and side slopes on mountains
- Sites taxadjunct soils on ridgetops and side slopes on mountains

Use and Management

Major uses: Timber production, wildlife habitat, and watershed
Management concerns: Slope

32. Obstruction-Obskel-Bottlehill

Very deep, deep, and moderately deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains
Slope range: 3 to 110 percent
Typical vegetation: White fir, ponderosa pine, Douglas-fir, sugar pine, California black oak, Pacific dogwood, whitethorn ceanothus, and greenleaf manzanita

Composition

Extent of the map unit: 2.7 percent
Extent of the components in the map unit:
Obstruction—22 percent
Obskel—19 percent

Bottlehill—16 percent
Minor components—43 percent

Soil Properties

Obstruction
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Loamy residuum and colluvium derived from coarse grained metamorphic rocks
Particle-size class: Fine-loamy
Soil temperature regime: Mesic
Slope: 3 to 70 percent

Obskel
Depth class: Deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Sandy residuum and colluvium derived from coarse grained metamorphic rocks
Particle-size class: Loamy-skeletal
Soil temperature regime: Mesic
Slope: 3 to 70 percent

Bottlehill
Depth class: Moderately deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Loamy residuum and colluvium derived from metavolcanic and metasedimentary rocks
Particle-size class: Loamy-skeletal
Soil temperature regime: Mesic
Slope: 3 to 110 percent

Minor Components

- Logtrain and Walkermine soils on ridgetops and side slopes on mountains
- Retsongulch soils on canyon side slopes in mountains

Use and Management

Major uses: Timber production, wildlife habitat, and watershed
Management concerns: Slope and depth to bedrock

Mesic Soils on Plutons in the Sierra Nevada Mountains

33. Islandbar-Featherfalls-Chawanakee

Very deep and shallow, nearly level to very steep, somewhat excessively drained and well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains
Slope range: 2 to 70 percent
Typical vegetation: Ponderosa pine, incense cedar, Douglas-fir, canyon live oak,

tanoak, Pacific madrone, whiteleaf manzanita, deerbrush, California honeysuckle, and poison oak

Composition

Extent of the map unit: 2 percent
Extent of the components in the map unit:
Islandbar—40 percent
Featherfalls—34 percent
Chawanakee—10 percent
Minor components—16 percent

Soil Properties

Islandbar
Depth class: Very deep
Drainage class: Somewhat excessively drained
Geomorphic position: Ridgetops and side slopes on plutons in mountains
Parent material: Sandy residuum and colluvium derived from quartz diorite
Particle-size class: Coarse-loamy
Soil temperature regime: Mesic
Slope: 2 to 70 percent

Featherfalls
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on plutons in mountains
Parent material: Loamy residuum and colluvium derived from quartz diorite
Particle-size class: Fine-loamy
Soil temperature regime: Mesic
Slope: 2 to 70 percent

Chawanakee
Depth class: Shallow
Drainage class: Somewhat excessively drained
Geomorphic position: Ridgetops and side slopes on plutons in mountains
Parent material: Sandy residuum and colluvium derived from quartz diorite
Particle-size class: Loamy
Soil temperature regime: Mesic
Slope: 3 to 70 percent

Minor Components

- Rock outcrop and Lithic Xerorthents on ridgetops and side slopes on mountains
- Fluvaquents, loamy, on stream terraces in mountain valleys

Use and Management

Major uses: Timber production, homesite development, wildlife habitat, and watershed
Management concerns: Depth to bedrock, slope, and erodibility

34. Bonneyridge-Chawanakee-Lewisflat

Very deep and shallow, nearly level to very steep, somewhat excessively drained and well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains (fig. 15)
Slope range: 2 to 110 percent

Figure 15.—Sierra Nevada (pluton) landscape and vegetation typical of general soil map unit 34. Exposed quartz diorite rock outcrop is in the foreground at left.

Typical vegetation: Ponderosa pine, sugar pine, white fir, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, and greenleaf manzanita

Composition

Extent of the map unit: 3.7 percent
Extent of the components in the map unit:
Bonneyridge—42 percent
Chawanakee—15 percent
Lewisflat—11 percent
Minor components—32 percent

Soil Properties

Bonneyridge
Depth class: Very deep
Drainage class: Somewhat excessively drained
Geomorphic position: Ridgetops and side slopes on plutons in mountains
Parent material: Sandy residuum and colluvium derived from quartz diorite
Particle-size class: Coarse-loamy
Soil temperature regime: Mesic
Slope: 2 to 110 percent

Chawanakee
Depth class: Shallow
Drainage class: Somewhat excessively drained
Geomorphic position: Ridgetops and side slopes on plutons in mountains
Parent material: Sandy residuum and colluvium derived from quartz diorite
Particle-size class: Loamy
Soil temperature regime: Mesic
Slope: 2 to 110 percent

Lewisflat
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on plutons in mountains
Parent material: Loamy residuum and colluvium derived from quartz diorite
Particle-size class: Fine-loamy
Soil temperature regime: Mesic
Slope: 2 to 50 percent

Minor Components

- Rock outcrop and Billscabin soils on ridgetops and side slopes on mountains

Use and Management

Major uses: Timber production, wildlife habitat, and watershed
Management concerns: Depth to bedrock, slope, and erodibility

Mesic Soils on Volcanic Sierra Nevada Mountains

35. Mudwash-Shakeridge-Timberisland

Very deep and deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains
Slope range: 0 to 70 percent
Typical vegetation: White fir, incense cedar, ponderosa pine, sugar pine, Douglas-fir, California black oak, deerbrush, whitethorn ceanothus, and greenleaf manzanita

Composition

Extent of the map unit: 0.7 percent
Extent of the components in the map unit:
Mudwash—35 percent
Shakeridge—19 percent
Timberisland—13 percent
Minor components—33 percent

Soil Properties

Mudwash
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on basalt plateaus
Parent material: Tephra over residuum and colluvium derived from Lovejoy basalt
Particle-size class: Medial over loamy
Soil temperature regime: Mesic
Slope: 0 to 50 percent

Shakeridge
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on basalt plateaus
Parent material: Tephra over residuum and colluvium derived from Lovejoy basalt
Particle-size class: Medial-skeletal

Soil temperature regime: Mesic
Slope: 0 to 70 percent

Timberisland
Depth class: Deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on basalt plateaus
Parent material: Tephra over residuum and colluvium derived from Lovejoy basalt
Particle-size class: Medial-skeletal
Soil temperature regime: Mesic
Slope: 0 to 30 percent

Minor Components

- Lava flows on tops of basalt plateaus
- Lumpkin and Lavatop soils on ridgetops and side slopes on basalt plateaus

Use and Management

Major uses: Timber production, wildlife habitat, and watershed
Management concerns: Slope

Frigid Soils on Volcanic Cascade Mountains

36. Bonepile

Deep, nearly level to moderately steep, well drained soils that formed in residuum; on mountains

Setting

Landscape: Cascade Mountains
Slope range: 2 to 30 percent
Typical vegetation: White fir, ponderosa pine, sugar pine, Douglas-fir, California black oak, greenleaf manzanita, Sierra chinquapin, and whitethorn ceanothus

Composition

Extent of the map unit: 0.6 percent
Extent of the components in the map unit:
Bonepile—69 percent
Minor components—31 percent

Soil Properties

Bonepile
Depth class: Deep
Drainage class: Well drained
Geomorphic position: Ridgetops on volcanic plateaus
Parent material: Tephra over residuum derived from volcanic rocks
Particle-size class: Medial-skeletal
Soil temperature regime: Frigid
Slope: 2 to 30 percent

Minor Components

- Bonepile taxadjunct soils on stream terraces in mountain valleys
- Lydon soils on ridgetops on volcanic plateaus

Use and Management

Major uses: Timber production, wildlife habitat, and watershed
Management concerns: Stones and boulders on the surface and depth to bedrock

Frigid Soils on Volcanic Sierra Nevada Mountains

37. Powderhouse-McNair-Greenwell

Moderately deep and deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains
Slope range: 0 to 50 percent
Typical vegetation: White fir, California red fir, sugar pine, incense cedar, California black oak, Jeffrey pine, greenleaf manzanita, and whitethorn ceanothus

Composition

Extent of the map unit: 0.6 percent
Extent of the components in the map unit:
Powderhouse—43 percent
McNair—23 percent
Greenwell—18 percent
Minor components—16 percent

Soil Properties

Powderhouse
Depth class: Moderately deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on volcanic plateaus
Parent material: Tephra, residuum, and colluvium derived from volcanic mudflow
Particle-size class: Medial-skeletal
Soil temperature regime: Frigid
Slope: 0 to 50 percent

McNair
Depth class: Deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on volcanic plateaus
Parent material: Tephra over residuum and colluvium derived from volcanic mudflow
Particle-size class: Medial-skeletal
Soil temperature regime: Frigid
Slope: 2 to 50 percent

Greenwell
Depth class: Moderately deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on volcanic plateaus
Parent material: Tephra over residuum and colluvium derived from volcanic mudflow
Particle-size class: Medial
Soil temperature regime: Frigid
Slope: 2 to 50 percent

Minor Components

- Lumpkin taxadjunct soils on tops of volcanic plateaus
- Rock outcrop on ridgetops and side slopes on volcanic plateaus

Use and Management

Major uses: Timber production, wildlife habitat, and watershed
Management concerns: Slope and depth to bedrock

Frigid Soils on Metamorphic Sierra Nevada Mountains

38. Dejonah-Stagpoint

Very deep, nearly level to very steep, well drained soils that formed in residuum and colluvium; on mountains

Setting

Landscape: Sierra Nevada Mountains
Slope range: 2 to 70 percent
Typical vegetation: White fir, California red fir, sugar pine, incense cedar, whitethorn ceanothus, greenleaf manzanita, and pinemat manzanita

Composition

Extent of the map unit: 0.7 percent
Extent of the components in the map unit:
Dejonah—39 percent
Stagpoint—39 percent
Minor components—22 percent

Soil Properties

Dejonah
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Tephra-influenced residuum and colluvium derived from metavolcanic and metamorphosed intrusive igneous rocks
Particle-size class: Fine-loamy
Soil temperature regime: Frigid
Slope: 2 to 70 percent

Stagpoint
Depth class: Very deep
Drainage class: Well drained
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Tephra-influenced residuum and colluvium derived from metavolcanic and metamorphosed intrusive igneous rocks
Particle-size class: Loamy-skeletal
Soil temperature regime: Frigid
Slope: 2 to 70 percent

Minor Components

- Rogerville taxadjunct soils on side slopes on mountains

Use and Management

Major uses: Timber production, wildlife habitat, and watershed
Management concerns: Slope

Frigid Soils on Moraines in the Sierra Nevada and Cascade Mountains

39. Haploxerands, Volcanic Till-Haploxerands, Granitic Till

Moderately deep to very deep, nearly level to very steep, moderately well drained and well drained soils that formed in glacial till; on moraines on mountains

Setting

Landscape: Sierra Nevada and Cascade Mountains
Slope range: 2 to 50 percent
Typical vegetation: White fir, ponderosa pine, sugar pine, incense cedar, California red fir, California black oak, Sierra chinquapin, and greenleaf manzanita

Composition

Extent of the map unit: 0.4 percent
Extent of the components in the map unit:
Haploxerands, volcanic till—37 percent
Haploxerands, granitic till—36 percent
Minor components—27 percent

Soil Properties

Haploxerands, volcanic till
Depth class: Moderately deep to very deep
Drainage class: Moderately well drained and well drained
Geomorphic position: Ridgetops and side slopes on glacial moraines
Parent material: Bouldery, loamy glacial till derived from igneous rocks
Particle-size class: Medial and medial-skeletal
Soil temperature regime: Frigid
Slope: 2 to 50 percent

Haploxerands, granitic till
Depth class: Moderately deep to very deep
Drainage class: Moderately well drained and well drained
Geomorphic position: Ridgetops and side slopes on glacial moraines
Parent material: Bouldery, sandy glacial till derived from igneous rocks
Particle-size class: Medial and medial-skeletal
Soil temperature regime: Frigid
Slope: 2 to 50 percent

Minor Components

- Haploxerands on terraces in mountain valleys
- Aquic Xerofluvents in meadows in mountain valleys
- Rock outcrop on ridgetops and side slopes on mountains

Use and Management

Major uses: Timber production, wildlife habitat, and watershed
Management concerns: Depth to dense glacial till, slope, erodibility, and boulders

W—Water

Extent of the map unit: 3.5 percent

Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Some map units from adjacent survey areas have been added to the soil legend for this survey area so that the mapping joins across survey area boundaries. Letters have been added at the end of the map symbols for these map units. The letters “co” refer to Colusa County, the letters “su” refer to Sutter County, and the letters “yu” refer to Yuba County.

Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Gianella silt loam, 0 to 1 percent slopes, frequently flooded, is a phase of the Gianella series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes. A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Lydon-Rock outcrop complex, 50 to 70 percent slopes, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop, Pits, Lava flows, and Riverwash are examples.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Block Diagrams of Detailed Soil Map Units

Prepared by Andrew Conlin, Soil Scientist, Natural Resources Conservation Service.

Figures 16 to 24 illustrate the relationship of the detailed soil map units in the survey area to the geology, geography, topography, slope phases, and climate in the area. Figure 16 shows the location of block diagrams 1 to 8 (figures 17 to 24). The block diagrams were produced from the detailed soil maps. The vertical scale of the diagrams is exaggerated 2 times in relation to the horizontal scale. This exaggeration helps to more clearly illustrate the topography of the area. The representative geology is not to scale and is idealized to help explain mapping concepts. The block diagrams are not intended to replace the detailed soil maps.

Block diagram 1 (figure 17).—This diagram shows the mouth of Big Chico Creek Canyon, where the creek transitions from its steeper foothill reach to its flatter Sacramento Valley reach in Bidwell Park. The creek has cut through the volcanic Tuscan Formation and is now cutting through hard Lovejoy basalt. The resistant Lovejoy basalt confines the stream channel, and a narrow slot canyon has formed at the bottom of the wider Tuscan Canyon. As the creek leaves the confinement of the slot canyon and enters the flatter topography of the valley, the energy of the water decreases, causing sediment to be deposited. As sediment fills the channel, the channel begins to move laterally. The channel slowly migrates away from the sediment deposits, allowing the sediment to form into alluvial soils.

Block diagram 2 (figure 18).—This diagram shows a portion of the Table Mountain area, the result of stream erosion slowly cutting away basalt flow rock, exposing the underlying Ione Formation. The sediment produced from this downcutting is transported downstream to flatter surrounding areas and over time is deposited and forms alluvial soils on various alluvial landforms.

Block diagram 3 (figure 19).—This diagram shows the interface of the Northern Sierra Nevada and Southern Cascade Mountains. Volcanic flows moved down the canyon of the West Branch of the Feather River, burying Sierra Nevada rocks, and partially filled the canyon, forming a volcanic plain. Subsequent geologic erosion has cut away the original plain of volcanic rocks and has left remnants surrounded by

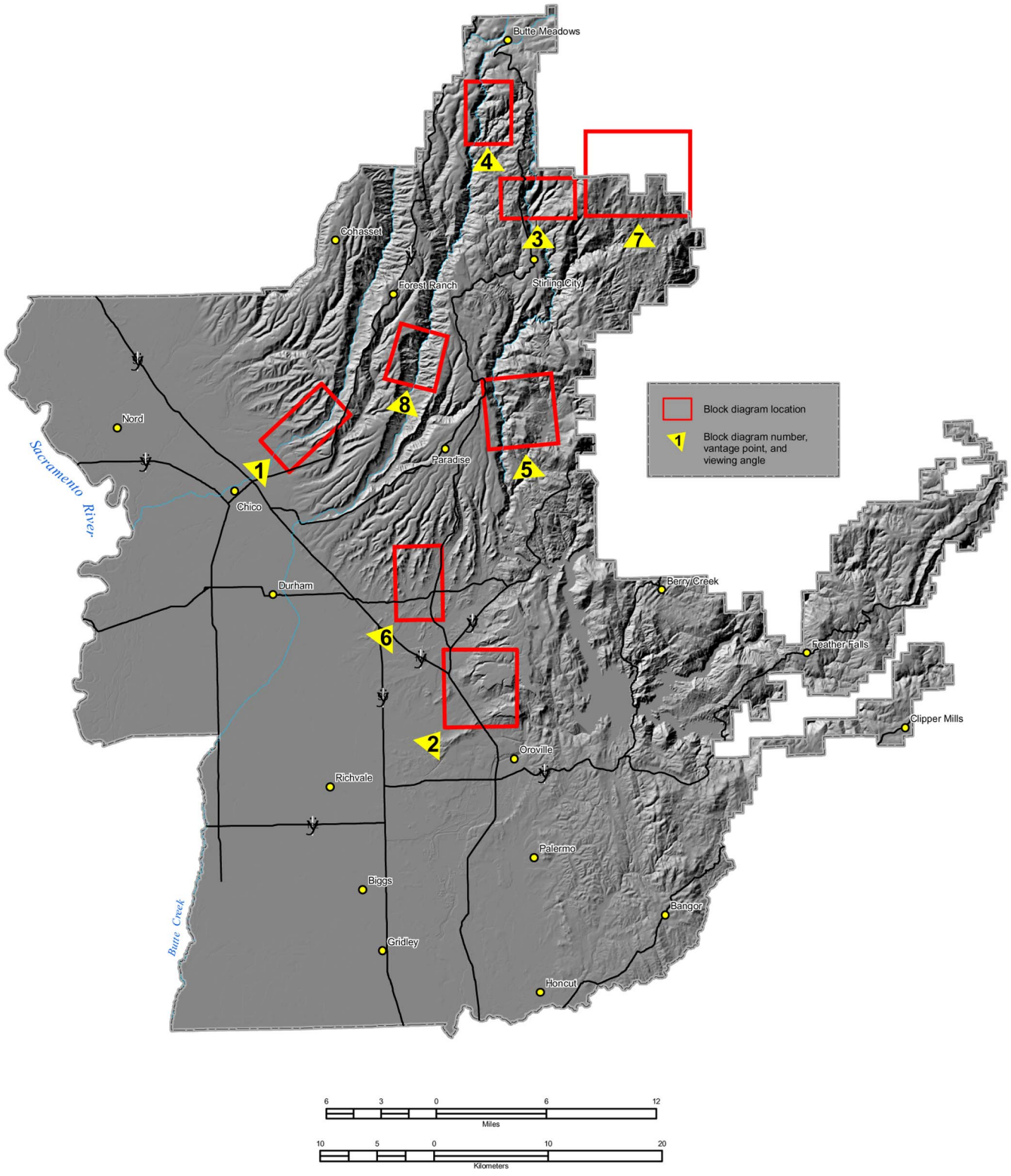
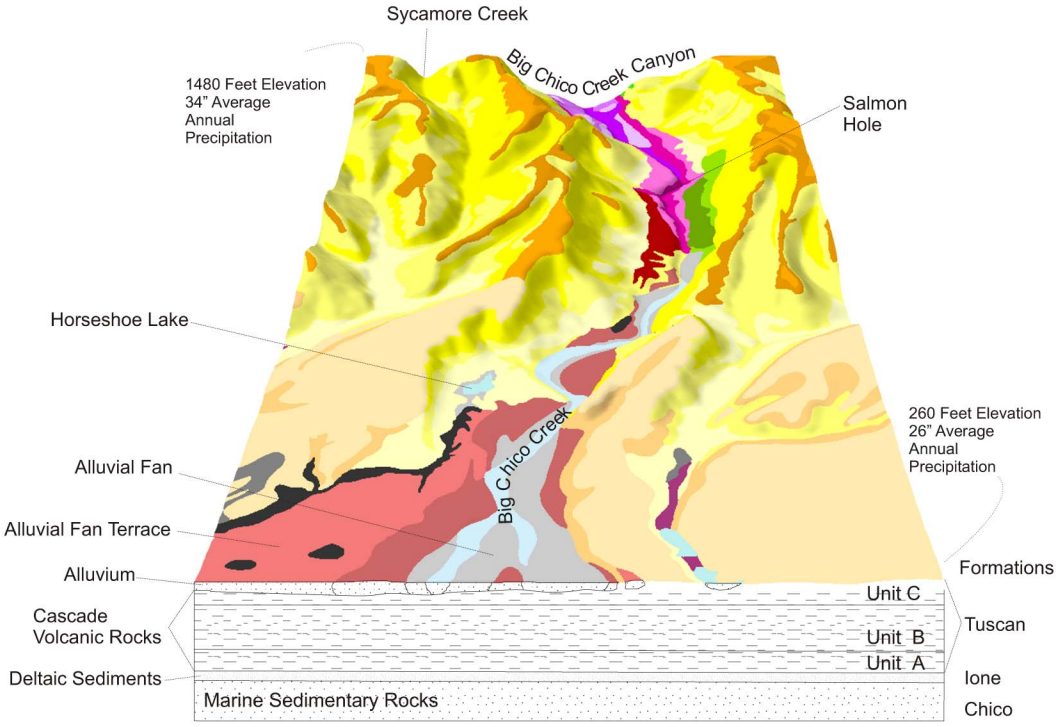


Figure 16.—Map showing locations and viewing angles of the block diagrams of detailed soil map units (figs. 17-24).



Legend

Flood Plain
- 991 XEROFLUVENTS, 0 TO 4 PERCENT SLOPES FREQUENTLY FLOODED

Alluvial Fan
- 447 CHARGER FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES

Alluvial Fan Terraces
- 100 ANITA-GALT COMPLEX, 0 TO 3 PERCENT SLOPES
- 300 REDSLUFF GRAVELLY LOAM, 0 TO 2 PERCENT SLOPES
- 302 REDTOUGH GRAVELLY LOAM, 0 TO 2 PERCENT SLOPES

Strath Terraces
- 675 CLEARHAYES-HAMSLOUGH COMPLEX, 0 TO 2 PERCENT SLOPES
- 676 CARHART-ANITA TAXADJUNCT COMPLEX, 0 TO 12 PERCENT SLOPES
- 677 TUSCAN-FALLAGER-ANITA, GRAVELLY DURIPAN, COMPLEX, 0 TO 3 PERCENT SLOPES

Volcanic Ridgetops
- 619 CARHART TAXADJUNCT, 0 TO 2 PERCENT SLOPES
- 614 DOEMILL-JOKERST COMPLEX, 0 TO 3 PERCENT SLOPES
- 615 DOEMILL-JOKERST COMPLEX, 3 TO 8 PERCENT SLOPES
- 620 DOEMILL-JOKERST-ULTIC HAPLOXERALFS, THERMIC,COMPLEX, 3 TO 8 PERCENT SLOPES
- 621 DOEMILL-JOKERST-ULTIC HAPLOXERALFS, THERMIC,COMPLEX, 8 TO 15 PERCENT SLOPES

Side Slopes on Volcanic Ridges
- 616 JOKERST-DOEMILL-TYPIC HAPLOXERALFS COMPLEX, 8 TO 15 PERCENT SLOPES
- 617 JOKERST-DOEMILL-TYPIC HAPLOXERALFS COMPLEX, 15 TO 30 PERCENT SLOPES
- 687 XERORTHENTS, SHALLOW-TYPIC HAPLOXERALFS COMPLEX, 2 TO 15 PERCENT SLOPES
- 622 XERORTHENTS, SHALLOW-TYPIC HAPLOXERALFS-ROCK OUTCROP, CLIFFS, COMPLEX, 15 TO 30 PERCENT SLOPES
- 623 XERORTHENTS, SHALLOW-TYPIC HAPLOXERALFS-ROCK OUTCROP, CLIFFS,COMPLEX, 30 TO 50 PERCENT SLOPES
- 626 ULTIC HAPLOXERALFS-ROCKSTRIPE-ROCK OUTCROP, CLIFFS, COMPLEX, 30 TO 50 PERCENT SLOPES
- 642 CHINACAMP GRAVELLY LOAM, 3 TO 15 PERCENT SLOPES
- 643 CHINACAMP GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES

Basalt Flows and Escarpments in Canyons
- 340 ROCK OUTCROP-THERMALROCKS-CAMPBELLHILLS COMPLEX, 2 TO 15 PERCENT SLOPES
- 656 ROCK OUTCROP, CLIFFS-COALCANYON TAXADJUNCT COMPLEX, 15 TO 50 PERCENT SLOPES

Basalt Colluvium in Canyons
- 646 COALCANYON TAXADJUNCT VERY GRAVELLY LOAM, 3 TO 15 PERCENT SLOPES
- 647 COALCANYON TAXADJUNCT VERY GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES
- 648 COALCANYON TAXADJUNCT VERY GRAVELLY LOAM, 30 TO 50 PERCENT SLOPES

- 999 WATER

Figure 17.—Block diagram 1.

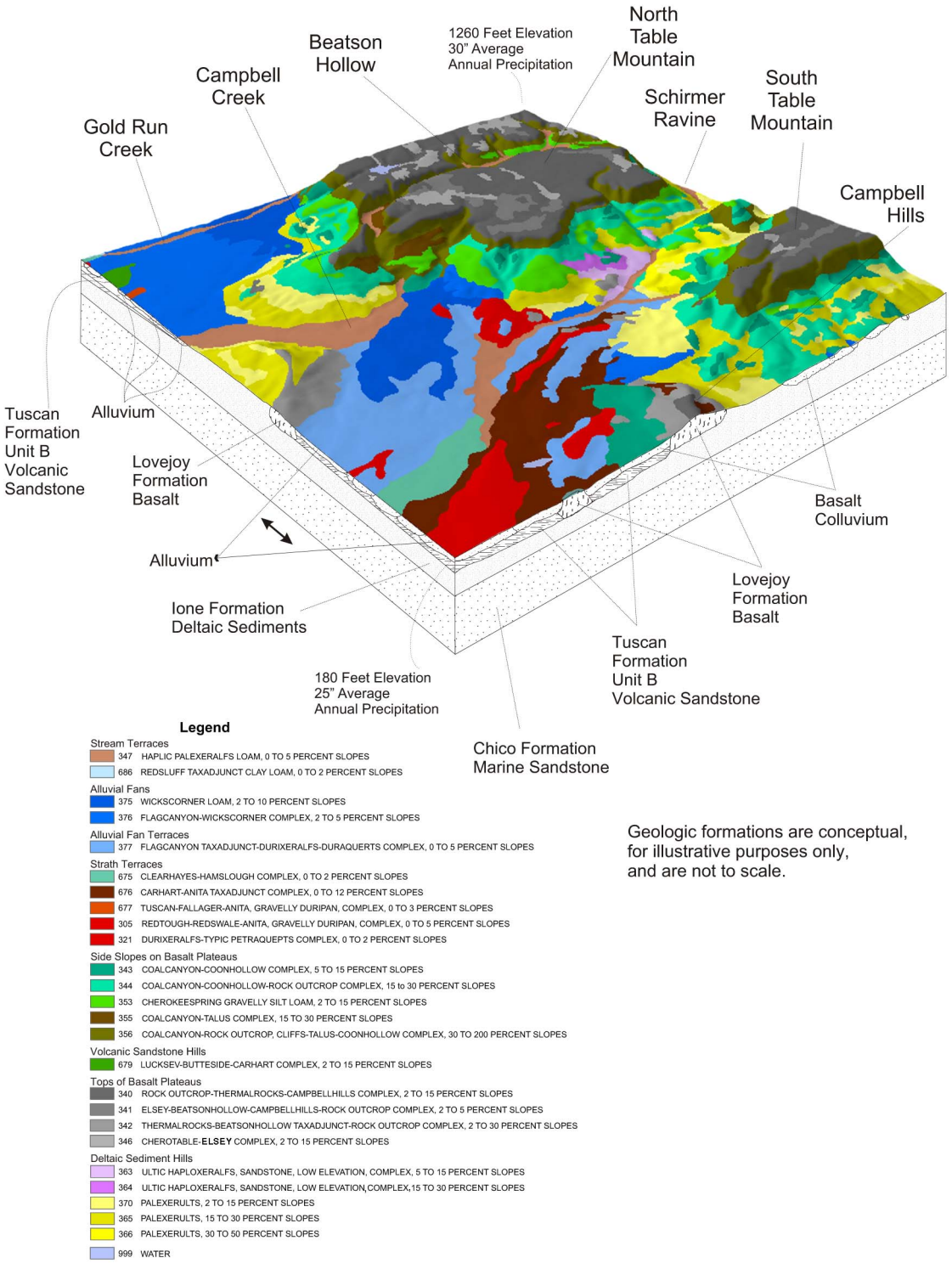
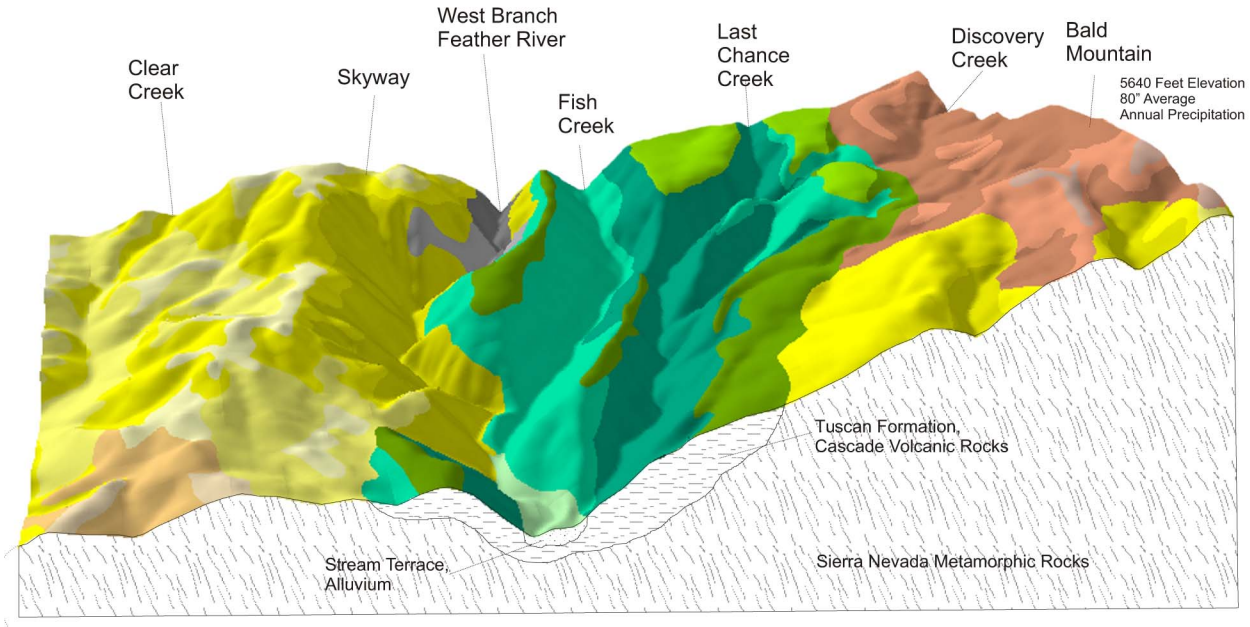


Figure 18.—Block diagram 2.



Legend

Alluvium on Stream Terraces
- 732 BONEPILE TAXADJUNCT, 2 TO 8 PERCENT SLOPES

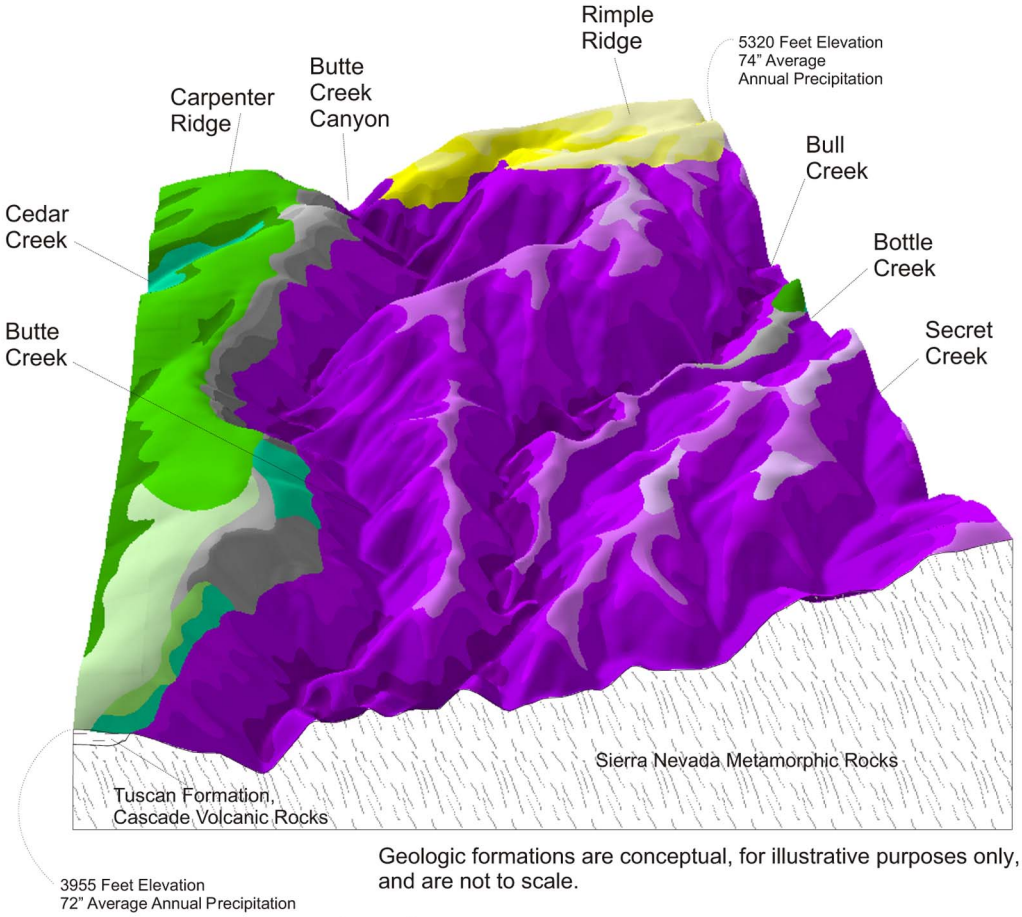
Colluvium on Side Slopes on Volcanic Ridges
- 824 BEECEE VERY GRAVELLY LOAM, 30 TO 50 PERCENT SLOPES
- 825 BEECEE-LYDON COMPLEX, 50 TO 70 PERCENT SLOPES

Residuum on Volcanic Ridgetops
- 822 BONEPILE GRAVELLY MEDIAL LOAM, 2 TO 15 PERCENT SLOPES
- 823 BONEPILE GRAVELLY MEDIAL LOAM, 15 TO 30 PERCENT SLOPES

Residuum and Colluvium on Metamorphic Mountains
- 811 POWELLTON-TOADTOWN COMPLEX, 3 TO 15 PERCENT SLOPES
- 812 POWELLTON-TOADTOWN COMPLEX, 15 TO 30 PERCENT SLOPES
- 801 OBSTRUCTION GRAVELLY SANDY LOAM, 3 TO 15 PERCENT SLOPES
- 802 OBSKEL-OBSTRUCTION COMPLEX, 15 TO 30 PERCENT SLOPES
- 803 OBSKEL-OBSTRUCTION COMPLEX, 30 TO 50 PERCENT SLOPES
- 804 OBSKEL-OBSTRUCTION-RETSONGULCH COMPLEX, 50 TO 70 PERCENT SLOPES
- 808 BOTTLEHILL-WALKERMINE-LOGTRAIN COMPLEX, 50 TO 70 PERCENT SLOPES
- 809 WALKERMINE-BOTTLEHILL-LOGTRAIN-ROCK OUTCROP COMPLEX, 70 TO 110 PERCENT SLOPES
- 940 DEJONAH-STAGPOINT COMPLEX, 2 TO 15 PERCENT SLOPES
- 941 DEJONAH-STAGPOINT COMPLEX, 15 TO 30 PERCENT SLOPES
- 942 STAGPOINT-DEJONAH COMPLEX, 30 TO 50 PERCENT SLOPES

Geologic formations are conceptual, for illustrative purposes only, and are not to scale.

Figure 19.—Block diagram 3.



Legend

Colluvium on Side Slopes on Volcanic Ridges in Cascade Mountains

	819	LYDON-ROCK OUTCROP COMPLEX, 30 TO 50 PERCENT SLOPES
	820	LYDON-ROCK OUTCROP COMPLEX, 50 TO 70 PERCENT SLOPES
	824	BEECEE VERY GRAVELLY MEDIAL LOAM, 30 TO 50 PERCENT SLOPES

Residuum on Volcanic Ridgetops in Cascade Mountains

	814	MOUNTYANA GRAVELLY LOAM, 2 TO 15 PERCENT SLOPES
	815	MOUNTYANA GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES
	817	LYDON VERY GRAVELLY MEDIAL COARSE SANDY LOAM, 2 TO 15 PERCENT SLOPES
	818	LYDON VERY GRAVELLY MEDIAL COARSE SANDY LOAM, 15 TO 30 PERCENT SLOPES
	826	REDBONE GRAVELLY MEDIAL SANDY LOAM, 3 TO 15 PERCENT SLOPES
	827	REDBONE GRAVELLY MEDIAL SANDY LOAM, 15 TO 30 PERCENT SLOPES

Residuum and Colluvium on Ridgetops and Side Slopes on Metamorphic Sierra Nevada Mountains

	801	OBSTRUCTION GRAVELLY SANDY LOAM, 3 TO 15 PERCENT SLOPES
	802	OBSKEL-OBSTRUCTION COMPLEX, 15 TO 30 PERCENT SLOPES
	803	OBSKEL-OBSTRUCTION COMPLEX, 30 TO 50 PERCENT SLOPES
	804	OBSKEL-OBSTRUCTION-RETSONGULCH COMPLEX, 50 TO 70 PERCENT SLOPES
	805	BOTTLEHILL-WALKERMINE-LOGTRAIN COMPLEX, 3 TO 15 PERCENT SLOPES
	806	BOTTLEHILL-WALKERMINE-LOGTRAIN COMPLEX, 15 TO 30 PERCENT SLOPES
	807	BOTTLEHILL-LOGTRAIN-WALKERMINE COMPLEX, 30 TO 50 PERCENT SLOPES
	808	BOTTLEHILL-WALKERMINE-LOGTRAIN COMPLEX, 50 TO 70 PERCENT SLOPES
	809	WALKERMINE-BOTTLEHILL-LOGTRAIN-ROCK OUTCROP COMPLEX, 70 TO 110 PERCENT SLOPES

Figure 20.—Block diagram 4.

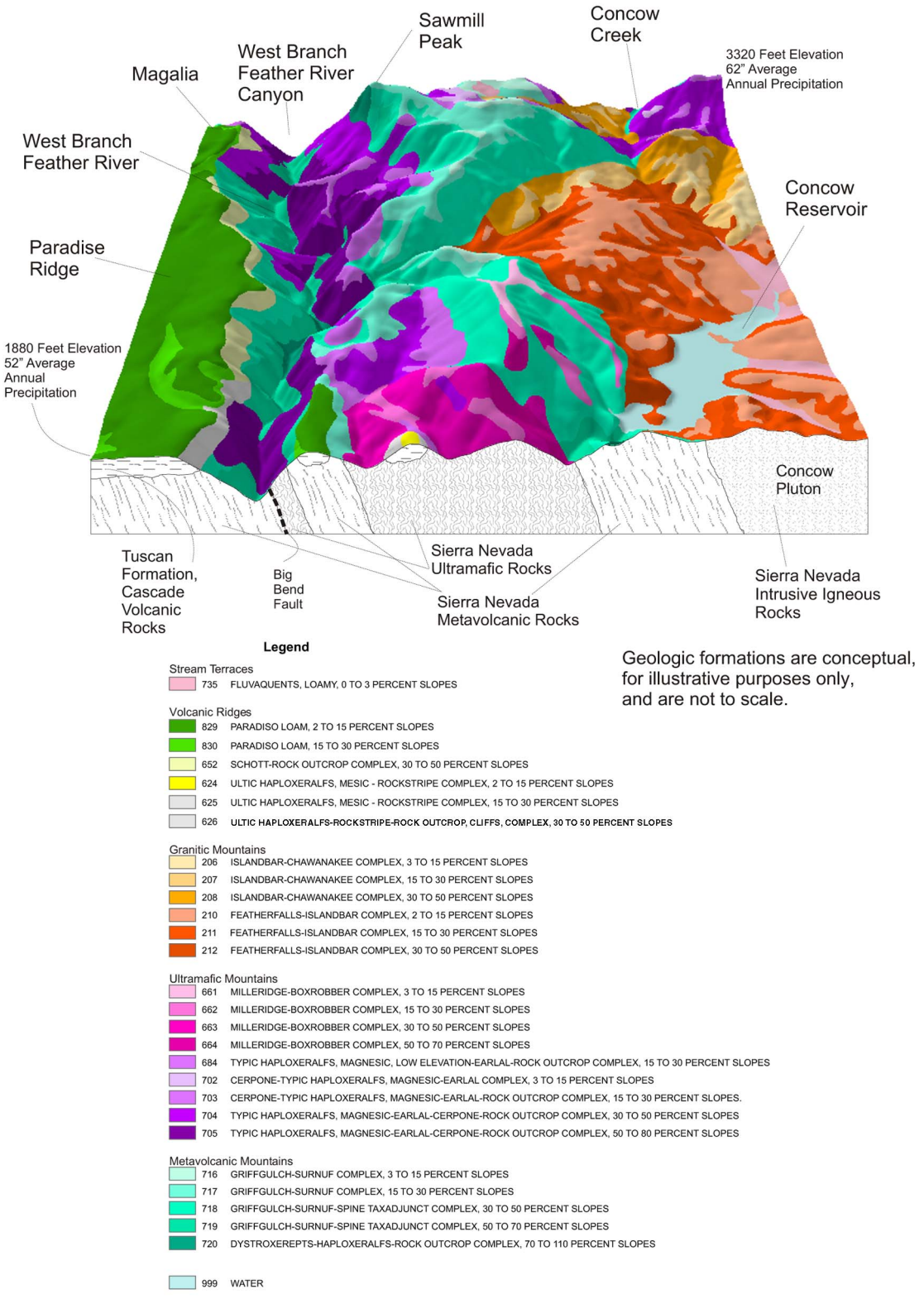


Figure 21.—Block diagram 5.

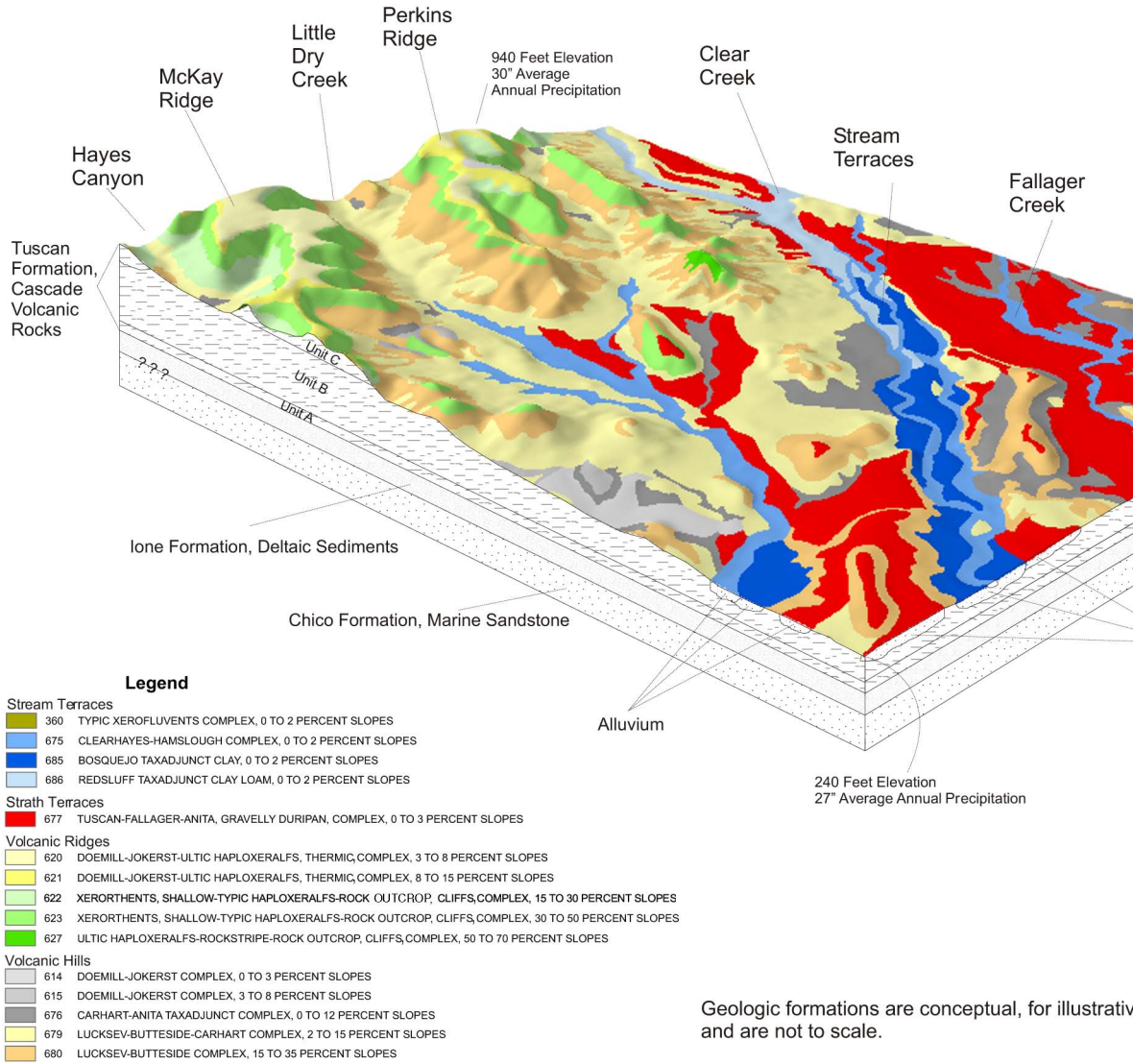


Figure 22.—Block diagram 6.

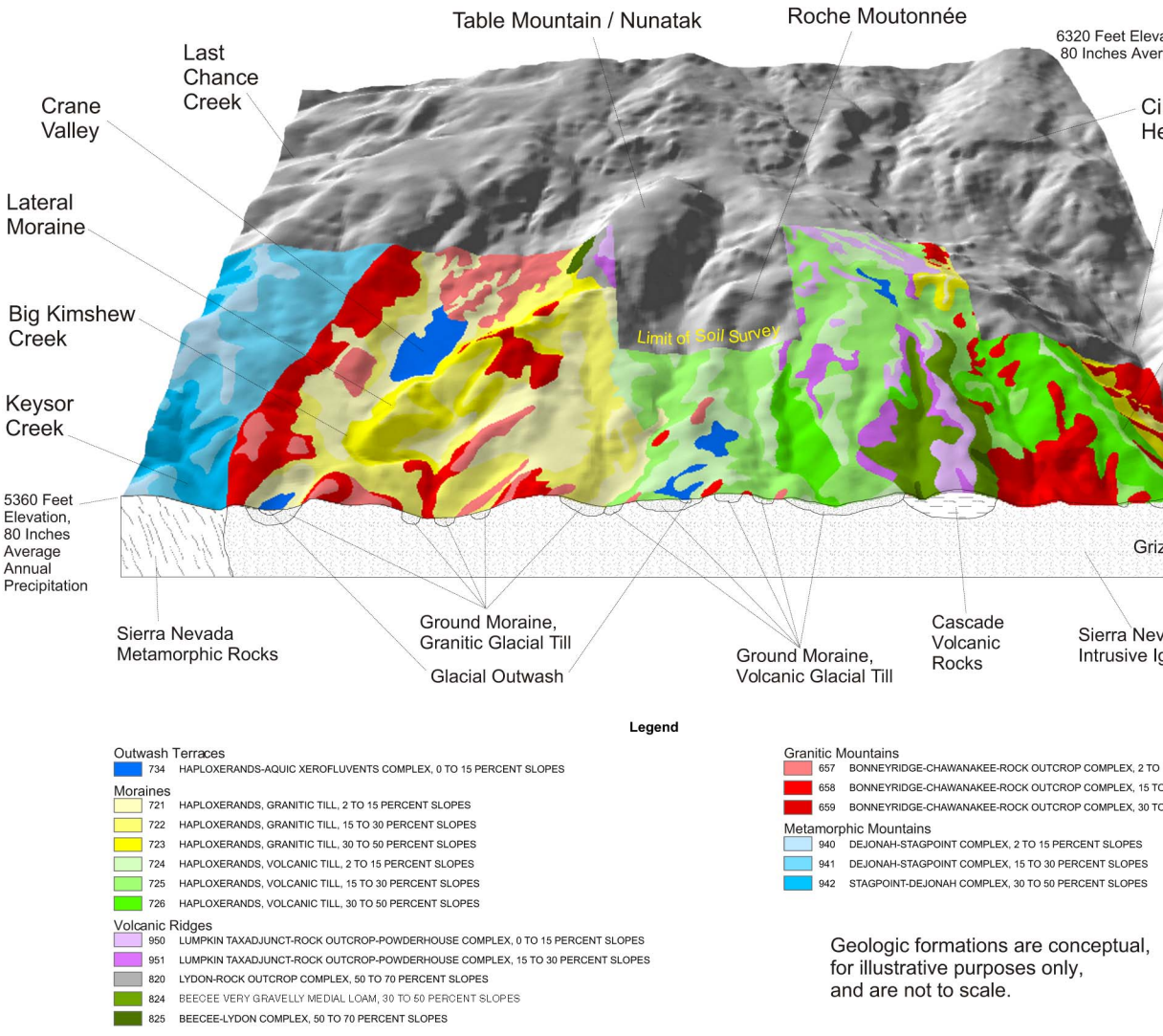
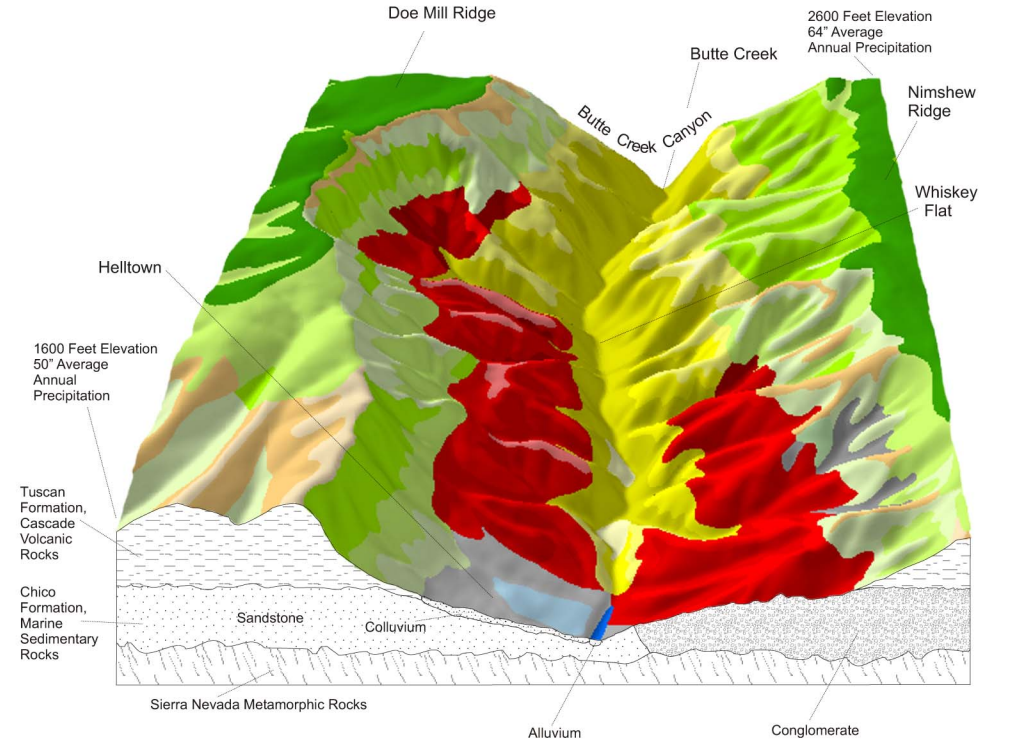


Figure 23.—Block diagram 7.



Geologic formations are conceptual, for illustrative purposes only, and are not to scale.

Legend

Alluvium on Flood Plains
- 991 XEROFLUVENTS, 0 TO 4 PERCENT SLOPES,FREQUENTLY FLOODED

Colluvium on Footslopes in Canyons
- 629 SLIDELAND GRAVELLY LOAM, 3 TO 15 PERCENT SLOPES
- 643 CHINACAMP GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES
- 644 CHINACAMP GRAVELLY LOAM, 30 TO 50 PERCENT SLOPES
- 645 CHINACAMP GRAVELLY LOAM, 50 TO 70 PERCENT SLOPES

Residuum and Colluvium on Volcanic Ridges
- 623 XERORTHENTS, SHALLOW-TYPIC HAPLOXERALFS-ROCK OUTCROP, CLIFFS,COMPLEX, 30 TO 50 PERCENT SLOPES
- 624 ULTIC HAPLOXERALFS, MESIC - ROCKSTRIPE COMPLEX, 2 TO 15 PERCENT SLOPES
- 625 ULTIC HAPLOXERALFS, MESIC - ROCKSTRIPE COMPLEX, 15 TO 30 PERCENT SLOPES
- 626 ULTIC HAPLOXERALFS-ROCKSTRIPE-ROCK OUTCROP,CLIFFS,COMPLEX,30 TO 50 PERCENT SLOPES
- 627 ULTIC HAPLOXERALFS-ROCKSTRIPE-ROCK OUTCROP, CLIFFS,COMPLEX, 50 TO 70 PERCENT SLOPES
- 628 ROCKSTRIPE-ULTIC HAPLOXERALFS-ROCK OUTCROP, CLIFFS,COMPLEX, 70 TO 100 PERCENT SLOPES
- 650 SCHOTT VERY GRAVELLY LOAM, 3 TO 15 PERCENT SLOPES
- 651 SCHOTT VERY GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES
- 652 SCHOTT-ROCK OUTCROP COMPLEX, 30 TO 50 PERCENT SLOPES
- 829 PARADISO LOAM, 2 TO 15 PERCENT SLOPES
- 830 PARADISO LOAM, 15 TO 30 PERCENT SLOPES

Residuum and Colluvium on Marine Conglomerate in Canyons
- 632 ULTIC HAPLOXERALFS, CONGLOMERATE,COMPLEX, 3 TO 15 PERCENT SLOPES
- 633 ULTIC HAPLOXERALFS, CONGLOMERATE,COMPLEX, 15 TO 30 PERCENT SLOPES
- 634 ULTIC HAPLOXERALFS, CONGLOMERATE,COMPLEX, 30 TO 50 PERCENT SLOPES
- 635 ULTIC HAPLOXERALFS, CONGLOMERATE,COMPLEX, 50 TO 70 PERCENT SLOPES

Residuum and Colluvium on Metamorphic Rocks in Canyons
- 670 OROSHORE-MOUNTHOPE-DUNSTONE COMPLEX, 15 TO 30 PERCENT SLOPES
- 671 OROSHORE-MOUNTHOPE-DUNSTONE COMPLEX, 30 TO 50 PERCENT SLOPES
- 672 OROSHORE-MOUNTHOPE-DUNSTONE COMPLEX, 50 TO 70 PERCENT SLOPES
- 720 DYSTROXEREPTS-HAPLOXERALFS-ROCK OUTCROP COMPLEX, 70 TO 110 PERCENT SLOPES

Figure 24.—Block diagram 8.

steep canyons. The area of alluvium shown near the bottom of the diagram is a bar of sediment deposited in the flatter volcanic reach below the steeper metamorphic reach.

Block diagram 4 (figure 20).—This diagram shows the topographic difference between some of the volcanic Cascade and metamorphic Sierra Nevada landforms. Stream channels cut across the grain of the nearly vertically oriented metamorphic Sierra Nevada rocks. The resistance of the metamorphic rocks deflects the stream from side to side, forming an irregular topography. The volcanic flows traveled horizontally and buried the Sierra Nevada rocks, forming a dissected plateau.

Block diagram 5 (figure 21).—This diagram shows the relationships between the Cascade volcanic flows and the metamorphic and granitic Sierra Nevada rocks. The flatter volcanic flows on the left buried the folded metamorphic rocks in the middle. The uniform intrusive igneous rocks weather to soils that are less resistant to geologic erosion and produce subtle, more evenly developed relief.

Block diagram 6 (figure 22).—This diagram shows the transition from the volcanic foothills to the flatter topography of the strath terraces adjacent to the Sacramento Valley. In the steeper upper reaches, the stream channels are confined on the canyon bottoms and begin to migrate laterally as the gradient decreases. As the stream channels meander with lower energy, they deposit sediment, forming various alluvial soils and landforms over time.

Block diagram 7 (figure 23).—This diagram shows a series of glacial moraines. Early glaciers scoured and partially removed the original volcanic flows and produced glacial till derived mostly from volcanic rocks. Subsequent glaciers formed on the exposed underlying pluton and produced glacial till derived mostly from intrusive igneous rocks.

Block diagram 8 (figure 24).—This diagram shows the stretch of Butte Creek Canyon where the creek has cut through volcanic flows, exposing underlying marine sedimentary rocks and Sierran metamorphic rocks. The upstream portion of the marine sedimentary rocks is conglomerate, the gravelly and cobbly facies. The downstream portion is sandstone, the sand facies. The conglomerate erodes one clast at a time and forms steep ravines. The sandstone holds water and often gives way in landslides and becomes buried by the colluvium from the rocks above.

100—Anita-Galt complex, 0 to 3 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 170 to 340 feet (52 to 104 meters)
Mean annual precipitation: 23 to 27 inches (584 to 686 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 days

Map Unit Composition

Anita clay—60 percent
Galt clay—25 percent
Minor components—15 percent

Characteristics of Anita Clay

Slope: 0 to 3 percent
Geomorphic position: Drainageways and depressions on fan terraces

Parent material: Clayey alluvium over cemented, loamy alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, well rounded gravel, 0 to 25 percent well rounded cobbles, 0 to 2 percent well rounded stones
Depth to a restrictive feature (duripan): 10 to 20 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Occasional
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 20 inches
Available water capacity: Very low (about 2.2 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6s-5
Land capability, nonirrigated: 6s-5
Storie index: 3 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 1 inch; clay
A2—1 to 3 inches; clay
Bss1—3 to 10 inches; clay
Bss2—10 to 15 inches; clay
2Bkqm—15 to 20 inches; duripan

Characteristics of Galt Clay

Slope: 0 to 3 percent
Geomorphic position: Drainageways and depressions on fan terraces
Parent material: Clayey alluvium over cemented, loamy alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Occasional
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Low (about 4.8 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 10 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 3 inches; clay
A2—3 to 13 inches; clay
Bss—13 to 29 inches; clay
Bkss—29 to 32 inches; clay
2Bkqm—32 to 39 inches; duripan

Minor Components in Map Unit 100

Bosquejo clay and similar soils
Composition: 3 percent
Slope: 0 to 3 percent
Geomorphic position: Drainageways and depressions on fan terraces
Hydric soil status: Hydric

Areas where a duripan or volcanic sediments crop out
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

Igo loam and similar soils
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

Tuscan gravelly loam and similar soils
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Vernal pools on fan terraces
Hydric soil status: Hydric

Anita taxadjunct clay and similar soils
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Toeslopes on volcanic ridges
Hydric soil status: Hydric

Soils that have a gravelly duripan
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Fan terraces
Hydric soil status: Hydric

104—Bosquejo clay, 0 to 1 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Row crops, grain crops, hay, and orchard crops
Major land resource area: 17

Landscape: Sacramento Valley
Elevation: 110 to 190 feet (35 to 59 meters)
Mean annual precipitation: 21 to 25 inches (533 to 635 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Bosquejo clay—85 percent
Minor components—15 percent

Characteristics of Bosquejo Clay

Slope: 0 to 1 percent
Geomorphic position: Interfan basins
Parent material: Clayey alluvium over loamy alluvium derived from volcanic rocks
Observed vegetation: Row crops and prune and almond orchards
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* Rare
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 12 to 60 inches
- *Available water capacity:* High (about 9.7 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 2w-2
- *Land capability, nonirrigated:* 3w-2
- *Storie index:* 35 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* D

Typical profile
- Ap—0 to 8 inches; clay
- Bss1—8 to 19 inches; clay
- Bss2—19 to 24 inches; clay
- 2Bk—24 to 37 inches; silty clay
- 2Bw1—37 to 44 inches; clay loam
- 2Bw2—44 to 46 inches; loam
- 2Bq—46 to 60 inches; loam

Minor Components in Map Unit 104

Busacca clay loam and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Galt clay and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Fan terraces
Hydric soil status: Hydric

Haploxerolls clay loam and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Conejo clay loam and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Kusalslough silt loam and similar soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

Edjobe silty clay and similar soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

105—Busacca clay loam, 0 to 1 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Irrigated pasture, row crops, grain crops, orchard crops, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 120 to 245 feet (37 to 75 meters)
Mean annual precipitation: 20 to 27 inches (508 to 686 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 255 days

Map Unit Composition

Busacca clay loam—85 percent
Minor components—15 percent

Characteristics of Busacca Clay Loam

Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Parent material: Clayey alluvium over loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Almond and prune orchards, pasture grasses, wheat, and valley oak
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare

Annual ponding frequency: Occasional
Depth to a water table (zone of saturation): 30 to 80 inches
Available water capacity: Very high (about 11.3 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 2s-2
Land capability, nonirrigated: 3s-2
Storie index: 76 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap—0 to 3 inches; clay loam
A—3 to 8 inches; clay loam
Bw1—8 to 16 inches; clay loam
Bw2—16 to 28 inches; silty clay loam
Bw3—28 to 43 inches; silty clay loam
Bw4—43 to 60 inches; clay loam
Bw5—60 to 72 inches; clay loam

Minor Components in Map Unit 105

Bosquejo clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Interfan basins
Hydric soil status: Not hydric

Conejo clay loam and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Edjobe silty clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

108—Tuscan-Igo-Anita complex, 0 to 3 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 170 to 195 feet (52 to 60 meters)
Mean annual precipitation: 23 inches (584 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 250 days

Map Unit Composition

Tuscan gravelly loam—45 percent

Igo gravelly loam—20 percent
Anita clay—15 percent
Minor components—20 percent

Characteristics of Tuscan Gravelly Loam

Slope: 0 to 3 percent
Geomorphic position: Fan terraces
Parent material: Loamy alluvium over clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 25 percent medium, rounded gravel, 0 to 5 percent rounded cobbles
Depth to a restrictive feature (duripan): 10 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 2 to 20 inches
Available water capacity: Very low (about 1.5 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Storie index: 6 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 4 inches; clay loam
Bt2—4 to 7 inches; gravelly clay
Bt3—7 to 11 inches; cobbly clay
2Bqm—11 inches; cemented, gravelly duripan

Characteristics of Igo Gravelly Loam

Slope: 0 to 3 percent
Geomorphic position: Fan terraces
Parent material: Loamy alluvium over cemented, gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 2 to 50 percent medium, rounded gravel, 0 to 5 percent rounded cobbles
Depth to a restrictive feature (duripan): 4 to 10 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 2 to 10 inches
Available water capacity: Very low (about 1.3 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Storie index: 5 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; gravelly loam
Bt1—1 to 5 inches; gravelly clay loam
Bt2—5 to 9 inches; gravelly clay loam
2Bqm—9 inches; duripan

Characteristics of Anita Clay

Slope: 0 to 3 percent
Geomorphic position: Depressions and swales on fan terraces
Parent material: Clayey alluvium over cemented, loamy alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, well rounded gravel, 0 to 25 percent well rounded cobbles, 0 to 2 percent well rounded stones
Depth to a restrictive feature (duripan): 10 to 20 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 20 inches
Available water capacity: Very low (about 2.2 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6s-5
Land capability, nonirrigated: 6s-5
Storie index: 3 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 1 inch; clay
A2—1 to 3 inches; clay
Bss1—3 to 10 inches; clay
Bss2—10 to 15 inches; clay
2Bkqm—15 to 20 inches; duripan

Minor Components in Map Unit 108

Redtough and similar soils
Composition: 11 percent
Slope: 0 to 3 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

Areas where a duripan or volcanic sediments crop out
Composition: 5 percent

Slope: 0 to 3 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

Soils that formed in human-transported fill more than 60 inches thick
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Ripped and leveled fan terraces
Hydric soil status: Not hydric

Tuscan taxadjunct and similar soils
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

109—Bosquejo clay loam, 0 to 1 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Orchard and grain crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 140 to 200 feet (43 to 62 meters)
Mean annual precipitation: 22 to 24 inches (559 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Bosquejo clay loam—85 percent
Minor components—15 percent

Characteristics of Bosquejo Clay Loam

Slope: 0 to 1 percent
Geomorphic position: Interfan basins
Parent material: Clayey alluvium over loamy alluvium derived from volcanic rocks
Observed vegetation: Grain crops and prune and almond orchards
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: Occasional
Depth to a water table (zone of saturation): 12 to 60 inches
Available water capacity: High (about 9.4 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 2w-2
Land capability, nonirrigated: 3w-2
Storie index: 62 (revised)

Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap—0 to 5 inches; clay loam
Bss1—5 to 24 inches; clay
Bss2—24 to 40 inches; clay
2Bw—40 to 60 inches; loam

Minor Components in Map Unit 109

Haploxerolls clay loam and similar soils
Composition: 10 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Soils that are occasionally flooded
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Not hydric

Bosquejo taxadjunct clay and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

110—Bosquejo silt loam, 0 to 1 percent slopes, overwash, occasionally flooded

Map Unit Setting

General location: Northwestern Butte County
Major uses: Row crops and orchard crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 131 to 135 feet (40 to 41 meters)
Mean annual precipitation: 21 to 22 inches (533 to 559 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Bosquejo silt loam, overwash, occasionally flooded—90 percent
Minor components—10 percent

Characteristics of Bosquejo Silt Loam, Overwash, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood plains
Parent material: Silty alluvium derived from igneous, metamorphic, and sedimentary rocks over clayey alluvium over loamy alluvium derived from volcanic rocks
Observed vegetation: Row crops, almond orchards, and walnut orchards
Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Occasional
Annual ponding frequency: Occasional
Depth to a water table (zone of saturation): 12 to 60 inches
Available water capacity: Very high (about 10.3 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 2w-2
Land capability, nonirrigated: 3w-2
Storie index: 69 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap—0 to 8 inches; silt loam
2Ab—8 to 22 inches; clay
2Bssb—22 to 40 inches; clay
3Bwb1—40 to 55 inches; clay loam
3Bwb2—55 to 70 inches; clay loam

Minor Components in Map Unit 110

Bosquejo clay and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Interfan basins
Hydric soil status: Not hydric

Parrott silt loam and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

Busacca clay loam and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Conejo clay loam and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

111yu—Auburn-Sobrante complex, 8 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Woodland, livestock grazing, homesite development, wildlife habitat, and irrigated pasture

Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 25 to 1,095 feet (8 to 335 meters)
Mean annual precipitation: 22 to 28 inches (558 to 711 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 270 days

Map Unit Composition

Auburn loam—40 percent
Sobrante loam—40 percent
Minor components—20 percent

Characteristics of Auburn Loam

Slope: 8 to 15 percent
Geomorphic position: Convex ridgetops and the upper side slopes on metamorphic hills
Parent material: Fine-loamy residuum weathered from greenstone
Observed vegetation: Blue oak and annual grasses and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (lithic bedrock): 10 to 28 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 2.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 4e-8
Land capability, nonirrigated: 4e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A to Bw2—0 to 17 inches; loam
R—17 inches; bedrock

Characteristics of Sobrante Loam

Slope: 8 to 15 percent
Geomorphic position: The lower side slopes and toeslopes on metamorphic hills
Parent material: Fine-loamy residuum weathered from greenstone
Observed vegetation: Blue oak, annual grasses and forbs, and scattered foothill pine
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature: 20 to 40 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Low (about 4.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3e-8
Land capability, nonirrigated: 3e-8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 5 inches; loam
Bt1 and Bt2—5 to 27 inches; clay loam
Cr—27 to 39 inches; soft or weathered bedrock
R—39 inches; bedrock

Minor Components in Map Unit 111yu

Argonaut and similar soils
Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Dunstone and similar soils
Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Loafercreek and similar soils
Composition: 3 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 3 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Timbuctoo and similar soils
Composition: 3 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Loamy soils that are less than 10 inches deep to bedrock
Composition: 3 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

114yu—Auburn-Sobrante complex, gravelly, 8 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Woodland, livestock grazing, homesite development, wildlife habitat, and irrigated pasture
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 295 to 1,945 feet (91 to 594 meters)
Mean annual precipitation: 26 to 35 inches (660 to 889 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Auburn gravelly loam—40 percent
Sobrante gravelly loam—40 percent
Minor components—20 percent

Characteristics of Auburn Gravelly Loam

Slope: 8 to 15 percent
Geomorphic position: Convex ridgetops and the upper side slopes on metamorphic hills
Parent material: Fine-loamy residuum weathered from greenstone
Observed vegetation: Blue oak, interior live oak, foothill pine, shrubs, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (lithic bedrock): 10 to 28 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 4e-8
Land capability, nonirrigated: 4e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A to Bw2—0 to 17 inches; gravelly loam
R—17 inches; bedrock

Characteristics of Sobrante Gravelly Loam

Slope: 8 to 15 percent
Geomorphic position: Concave side slopes and toeslopes on metamorphic hills
Parent material: Fine-loamy residuum weathered from greenstone

Observed vegetation: Blue oak, interior live oak, foothill pine, shrubs, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature: 20 to 40 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3e-8
Land capability, nonirrigated: 3e-8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 5 inches; gravelly loam
Bt1 to Bt3—5 to 35 inches; gravelly clay loam
Cr—35 to 40 inches; soft or weathered bedrock
R—40 inches; bedrock

Minor Components in Map Unit 114yu

Rock outcrop
Composition: 6 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Argonaut and similar soils
Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Timbuctoo and similar soils
Composition: 3 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Soils that are less than 10 inches deep to lithic bedrock
Composition: 3 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Soils that are 10 to 40 inches deep to bedrock and have a subsoil of clay loam
Composition: 2 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

118—Xerorthents, tailings, 0 to 50 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Source of aggregate, recreation, wildlife habitat, and homesite development
Major land resource areas: 17 and 18
Landscape: Sacramento Valley, Butte Creek canyon bottoms in foothills
Elevation: 85 to 1,335 feet (26 to 408 meters)
Mean annual precipitation: 21 to 50 inches (533 to 1,270 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 240 to 260 days

Map Unit Composition

Xerorthents, tailings—80 percent
Minor components—20 percent

Characteristics of Xerorthents, Tailings

Slope: 0 to 50 percent
Geomorphic position: Spoil piles on stream terraces and flood plains
Parent material: Dredged spoil piles from gravelly alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: None or scattered valley oak, cottonwood, California sycamore, willow, Pacific poison oak, blackberry, and annual grasses and forbs; in the Butte Creek canyon area, stands of foothill pine and interior live oak
Surface features: Tailings consist of linear piles of gravel, cobbles, and stones 5 to 40 feet high. They include depressional areas that are often wet. Some areas have been leveled.
Texture of the surface layer: Very gravelly sandy loam
Percentage of the surface covered by rock fragments: 5 to 100 percent coarse, well rounded gravel, 10 to 100 percent well rounded cobbles, 0 to 50 percent subrounded stones
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* Occasional
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 60 to 80 inches
- *Available water capacity:* Low (about 3.5 inches)
- *Natural drainage class:* Somewhat excessively drained
- *Surface runoff (bare conditions):* Very low

Interpretive groups
Land capability, irrigated: 4e-7
Land capability, nonirrigated: 4e-7
Storie index: 34 (revised)
Hydric soil status: Hydric
Hydrologic soil group: A

Typical profile
A—0 to 3 inches; very gravelly sandy loam
AC—3 to 8 inches; extremely gravelly sandy loam
C1—8 to 21 inches; loamy sand
C2—21 to 26 inches; loamy sand
C3—26 to 35 inches; loamy sand
C4—35 to 48 inches; loamy coarse sand
C5—48 to 59 inches; loamy sand
C6—59 to 81 inches; loamy sand

Minor Components in Map Unit 118

Soils that are in riparian areas
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Pits
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Xerofluvents, tailings, and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Xeropsamments, tailings, and similar soils
Composition: 3 percent
Slope: 0 to 50 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Haploxeralfs, terrace, and similar soils
Composition: 2 percent
Slope: 0 to 8 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Soils that have a duripan
Composition: 2 percent
Slope: 0 to 8 percent
Geomorphic position: Edges of terraces
Hydric soil status: Hydric

118co—Clear Lake clay, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

General location: Northeastern Colusa County and southwestern Butte County
Major uses: Irrigated crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 25 to 55 feet (8 to 17 meters)
Mean annual precipitation: 14 to 16 inches (355 to 405 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 225 to 250 days

Map Unit Composition

Clear Lake clay, frequently flooded—90 percent
Minor components—10 percent

Characteristics of Clear Lake Clay, Frequently Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Alluvium
Observed vegetation: Irrigated crops
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Flood-control structures along the Sacramento River have changed the frequency and duration of flooding and have lowered the water table. Drainage ditches for rice also have lowered the water table.
- *Annual flooding frequency:* Frequent
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 48 to 72 inches
- *Available water capacity:* High (about 8.9 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* Low

Interpretive groups
- *Land capability, irrigated:* 4w-2
- *Land capability, nonirrigated:* 4w-2
- *Storie index:* 21.0 (historical number)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* D

Typical profile
- Ap1—0 to 4 inches; clay
- Ap2—4 to 10 inches; clay
- Bss1—10 to 20 inches; clay
- Bss2—20 to 34 inches; clay
- Bss3—34 to 47 inches; clay
- Bssk1—47 to 59 inches; clay
- Bssk2—59 to 79 inches; clay

Minor Components in Map Unit 118co

Willows silty clay, frequently flooded, and similar soils
Composition: 6 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Clear Lake clay, occasionally flooded, and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils in channels
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Channels
Hydric soil status: Hydric

119—Xerorthents, tailings-Urban land complex, 0 to 2 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Homesite development, wildlife habitat, and source of aggregate
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 180 feet (26 to 56 meters)
Mean annual precipitation: 21 to 26 inches (533 to 660 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Xerorthents, tailings—70 percent
Urban land—30 percent

Characteristics of Xerorthents, Tailings

Slope: 0 to 2 percent
Geomorphic position: Spoil piles on terraces and flood plains
Parent material: Dredged spoil piles from gravelly alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: None or scattered valley oak, cottonwood, California sycamore, willow, Pacific poison oak, blackberry, and annual grasses and forbs
Surface features: Tailings consist of linear piles of gravel, cobbles, and stones 5 to 40 feet high. They include depressional areas that are often wet. Some areas have been leveled.
Texture of the surface layer: Very gravelly sandy loam
Percentage of the surface covered by rock fragments: 5 to 100 percent coarse, well rounded gravel, 10 to 100 percent well rounded cobbles, 0 to 50 percent subrounded stones
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Occasional
Annual ponding frequency: None
Depth to a water table (zone of saturation): 60 to 80 inches
Available water capacity: Low (about 3.5 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 4e-7
Land capability, nonirrigated: 4e-7
Storie index: 37 (revised)
Hydric soil status: Hydric
Hydrologic soil group: A

Typical profile
A—0 to 3 inches; very gravelly sandy loam
AC—3 to 8 inches; extremely gravelly sandy loam
C1—8 to 21 inches; loamy sand
C2—21 to 26 inches; loamy sand
C3—26 to 35 inches; loamy sand
C4—35 to 48 inches; loamy coarse sand
C5—48 to 59 inches; loamy sand
C6—59 to 81 inches; loamy sand

Characteristics of Urban Land

Slope: 0 to 2 percent
Geomorphic position: Leveled spoil piles on terraces and flood plains
Definition: Urban land generally is covered by streets, parking lots, sidewalks, buildings, and other structures.

119yu—Auburn-Sobrante-Rock outcrop complex, 30 to 50 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Woodland, livestock grazing, and wildlife habitat
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 295 to 1,945 feet (91 to 594 meters)
Mean annual precipitation: 26 to 35 inches (660 to 889 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Auburn gravelly loam—30 percent
Sobrante gravelly loam—30 percent
Rock outcrop—20 percent
Minor components—20 percent

Characteristics of Auburn Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Ridgetops and the upper side slopes on metamorphic hills
Parent material: Fine-loamy residuum weathered from greenstone
Observed vegetation: Blue oak, interior live oak, foothill pine, shrubs, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (lithic bedrock): 10 to 28 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very low (about 2.2 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Very high

Interpretive groups
- *Land capability, irrigated:* 6e-8
- *Land capability, nonirrigated:* 6e-8
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* D

Typical profile
- A to Bw2—0 to 17 inches; gravelly loam
- R—17 inches; bedrock

Characteristics of Sobrante Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: The lower side slopes and toeslopes on metamorphic hills
Parent material: Fine-loamy residuum weathered from greenstone
Observed vegetation: Blue oak, interior live oak, foothill pine, shrubs, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature: 20 to 40 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 4.5 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 6e-8
- *Land capability, nonirrigated:* 6e-8
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- A—0 to 5 inches; gravelly loam

Bt1 to Bt3—5 to 35 inches; gravelly clay loam
Cr—35 to 40 inches; soft or weathered bedrock
R—40 inches; bedrock

Characteristics of Rock Outcrop

Slope: 30 to 50 percent
Geomorphic position: Ridgetops and the upper side slopes on metamorphic hills
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 119yu

Hurleton and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Mounthope and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Timbuctoo and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Loamy soils that are less than 10 inches deep to bedrock
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

120—Gridley taxadjunct clay loam, 0 to 2 percent slopes

Map Unit Setting

General location: Southern Butte County and northern Sutter County
Major uses: Irrigated cropland, irrigated pasture, livestock grazing, homesite development, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 55 to 85 feet (18 to 26 meters)
Mean annual precipitation: 18 to 20 inches (457 to 508 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Gridley taxadjunct clay loam—80 percent
Minor components—20 percent

Characteristics of Gridley Taxadjunct Clay Loam

Slope: 0 to 2 percent
Geomorphic position: Low terraces

Parent material: Clayey and loamy alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice, prune orchards, and pasture species
Surface feature: Most areas have been leveled for agricultural production.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: Occasional
Depth to a water table (zone of saturation): 5 to 40 inches
Available water capacity: Low (about 3.9 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 3w-8
Land capability, nonirrigated: 3w-8
Storie index: 15 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 4 inches; clay loam
Bt1—4 to 9 inches; clay loam
Bt2—9 to 15 inches; clay loam
Btk—15 to 21 inches; clay loam
2Bkqm—21 to 60 inches; cemented coarse sandy loam

Minor Components in Map Unit 120

Neerdobe clay and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Gridley clay loam, siltstone substratum, and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Gridley taxadjunct loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Subaco taxadjunct clay and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Marcum clay loam and similar soils
Composition: 2 percent

Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Tisdale clay loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Sodic soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Gridley taxadjunct, frequently ponded, and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

121—Boga-Loemstone complex, 0 to 1 percent slopes

Map Unit Setting

General location: South-central Butte County and northern Sutter County
Major uses: Orchard crops, irrigated pasture, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 75 to 100 feet (23 to 32 meters)
Mean annual precipitation: 19 to 21 inches (483 to 533 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Boga loam—45 percent
Loemstone loam—40 percent
Minor components—15 percent

Characteristics of Boga Loam

Slope: 0 to 1 percent
Geomorphic position: Terraces along the Feather River
Parent material: Loamy alluvium over dense silty alluvium derived from igneous and metamorphic rocks
Observed vegetation: Walnut, kiwi, and peach orchards and valley oak
Surface feature: Most areas have been leveled for agricultural production.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (dense material): 60 to 80 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Occasional
Depth to a water table (zone of saturation): 20 to 80 inches

Available water capacity: Very high (about 12.0 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 2s-3
Land capability, nonirrigated: 3s-3
Storie index: 84 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap1—0 to 3 inches; loam
Ap2—3 to 6 inches; loam
Bt1—6 to 14 inches; clay loam
Bt2—14 to 29 inches; clay loam
Bt3—29 to 53 inches; clay loam
Bt4—53 to 73 inches; loam
2Cd—73 to 80 inches; dense material

Characteristics of Loemstone Loam

Slope: 0 to 1 percent
Geomorphic position: Terraces along the Feather River
Parent material: Loamy alluvium over dense silty alluvium derived from igneous and metamorphic rocks
Observed vegetation: Walnut, peach, and kiwi orchards and valley oak
Surface feature: Most areas have been leveled for agricultural production.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (dense material): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Occasional
Depth to a water table (zone of saturation): 18 to 60 inches
Available water capacity: High (about 9.5 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3s-3
Land capability, nonirrigated: 3s-3
Storie index: 54 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap1—0 to 2 inches; loam
Ap2—2 to 4 inches; silt loam
Ap3—4 to 10 inches; silt loam
Bt1—10 to 18 inches; clay loam
Bt2—18 to 23 inches; silty clay loam
Bt3—23 to 32 inches; silt loam
Bt4—32 to 40 inches; silt loam
Bt5—40 to 48 inches; silt loam
2Cd—48 to 57 inches; dense material

Minor Components in Map Unit 121

Soils that are 20 to 40 inches deep to densic material
Composition: 4 percent
Slope: 0 to 1 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Liveoak sandy clay loam and similar soils
Composition: 4 percent
Slope: 0 to 1 percent
Geomorphic position: Distributary channels
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Tisdale clay loam and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Marcum loam and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Coarse-loamy soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Distributary channels
Hydric soil status: Not hydric

121su—Columbia fine sandy loam, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

General location: Sutter and Butte Counties
Major uses: Irrigated orchard crops and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 20 to 80 feet (7 to 25 meters)
Mean annual precipitation: 17 to 22 inches (431 to 559 millimeters)
Mean annual air temperature: 60 to 64 degrees F (16 to 18 degrees C)
Frost-free period: 260 to 280 days

Map Unit Composition

Columbia fine sandy loam, frequently flooded—80 percent
Minor components—20 percent

Characteristics of Columbia Fine Sandy Loam, Frequently Flooded

Slope: 0 to 2 percent
Geomorphic position: Flood plains
Parent material: Sandy alluvium derived from mixed sources
Observed vegetation: Mixed riparian vegetation and walnut orchards
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Frequent
Annual ponding frequency: None
Depth to a water table (zone of saturation): 36 to 60 inches
Available water capacity: Moderate (about 6.5 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 4w
Land capability, nonirrigated: 4w
Storie index: 53.0 (historical number)
Hydric soil status: Hydric
Hydrologic soil group: C

Typical profile
Ap or A—0 to 14 inches; fine sandy loam
C1 to C4—14 to 60 inches; stratified fine sandy loam to very fine sandy loam

Minor Components in Map Unit 121su

Holillipah and similar soils
Composition: 7 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Tisdale and similar soils
Composition: 7 percent
Slope: 0 to 2 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Shanghai and similar soils
Composition: 6 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

125—Gridley taxadjunct-Calcic Haploxerolls complex, 0 to 2 percent slopes

Map Unit Setting

General location: Southern Butte County
Major uses: Irrigated cropland, irrigated pasture, homesite development, and wildlife habitat

Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 55 to 95 feet (18 to 30 meters)
Mean annual precipitation: 18 to 19 inches (457 to 483 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Gridley taxadjunct loam—65 percent
Calcic Haploxerolls sandy loam—20 percent
Minor components—15 percent

Characteristics of Gridley Taxadjunct Loam

Slope: 0 to 2 percent
Geomorphic position: Low terraces
Parent material: Loamy and clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Rice and pasture species
Surface feature: Most areas have been leveled for agricultural production.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* Rare
- *Annual ponding frequency:* Occasional
- *Depth to a water table (zone of saturation):* 5 to 40 inches
- *Available water capacity:* Low (about 3.9 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* Very high

Interpretive groups
- *Land capability, irrigated:* 3w-8
- *Land capability, nonirrigated:* 3w-8
- *Storie index:* 17 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* D

Typical profile
- A—0 to 10 inches; loam
- Bt—10 to 20 inches; clay loam
- Btk—20 to 22 inches; clay
- 2Bkqm—22 to 60 inches; duripan

Characteristics of Calcic Haploxerolls Sandy Loam

Slope: 0 to 2 percent
Geomorphic position: Convex areas on low terraces
Parent material: Loamy alluvium over dense, loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Rice and pasture species
Surface feature: Most areas have been leveled for agricultural production.
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (dense material): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Hydrology has been altered in areas leveled for agriculture.
Annual flooding frequency: Rare
Annual ponding frequency: None
Depth to a water table (zone of saturation): 30 to 60 inches
Available water capacity: Moderate (about 5.6 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 3s-6
Land capability, nonirrigated: 3s-6
Storie index: 67 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 5 inches; sandy loam
Ak—5 to 17 inches; sandy loam
Bk1—17 to 20 inches; sandy loam
Bk2—20 to 33 inches; sandy loam
C—33 to 44 inches; sandy loam
2Cd—44 to 72 inches; dense material

Minor Components in Map Unit 125

Subaco taxadjunct clay and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Marcum clay loam and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Soils that are less than 20 inches deep to a duripan
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

126—Liveoak sandy loam, 0 to 2 percent slopes

Map Unit Setting

General location: South-central Butte County and northern Sutter County
Major uses: Irrigated crops and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 110 feet (26 to 34 meters)
Mean annual precipitation: 19 to 21 inches (483 to 533 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Liveoak sandy loam—85 percent
Minor components—15 percent

Characteristics of Liveoak Sandy Loam

Slope: 0 to 2 percent
Geomorphic position: Distributary channels on terraces along the Feather River
Parent material: Loamy and sandy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Alfalfa and peach, prune, and walnut orchards
Surface feature: Most areas have been leveled for agricultural production.
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Because of the protection provided by levees, water very rarely flows into distributary channels.
- *Annual flooding frequency:* Very rare
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 11 to 40 inches
- *Available water capacity:* Moderate (about 7.5 inches)
- *Natural drainage class:* Moderately well drained
- *Surface runoff (bare conditions):* Negligible

Interpretive groups
- *Land capability, irrigated:* 2s-2
- *Land capability, nonirrigated:* 3s-2
- *Storie index:* 84 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Ap1—0 to 4 inches; sandy loam
- Ap2—4 to 17 inches; sandy loam
- Bw1—17 to 37 inches; sandy loam
- Bw2—37 to 48 inches; sandy loam
- Bw3—48 to 61 inches; sandy loam
- C1—61 to 71 inches; sand
- C2—71 to 75 inches; gravelly sand

Minor Components in Map Unit 126

Soils that have a light colored surface layer
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Boga loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Loemstone loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Gridley taxadjunct clay loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Xerofluvents, coarse-loamy, and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Distributary channels
Hydric soil status: Not hydric

Liveoak sandy clay loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Distributary channels
Hydric soil status: Not hydric

Urban land
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Leveled land

127—Gridley taxadjunct loam, 0 to 2 percent slopes

Map Unit Setting

General location: Southern Butte County and northern Sutter County
Major uses: Irrigated crops, livestock grazing, irrigated pasture, homesite development, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 65 to 95 feet (20 to 30 meters)
Mean annual precipitation: 18 to 21 inches (457 to 533 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Gridley taxadjunct loam—85 percent
Minor components—15 percent

Characteristics of Gridley Taxadjunct Loam

Slope: 0 to 2 percent
Geomorphic position: Low terraces
Parent material: Loamy and clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Rice and pasture species
Surface feature: Most areas have been leveled for agricultural production.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: Occasional
Depth to a water table (zone of saturation): 5 to 40 inches
Available water capacity: Low (about 3.9 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 3w-8
Land capability, nonirrigated: 3w-8
Storie index: 17 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 10 inches; loam
Bt—10 to 20 inches; clay loam
Btk—20 to 22 inches; clay
2Bkqm—22 to 60 inches; duripan

Minor Components in Map Unit 127

Soils that are frequently flooded
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Channels on low terraces
Hydric soil status: Hydric

Mollic Haploxeralfs, fine-loamy, and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Typic Argixerolls, fine-loamy, and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Typic Haploxerolls, fine-loamy, and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Soils that are less than 20 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Soils that are more than 40 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 2 percent

Geomorphic position: Low terraces
Hydric soil status: Not hydric

130—Eastbiggs loam, 0 to 2 percent slopes

Map Unit Setting

General location: Southern Butte County
Major uses: Cropland, livestock grazing, watershed, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 120 feet (27 to 38 meters)
Mean annual precipitation: 21 to 23 inches (533 to 584 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 250 days

Map Unit Composition

Eastbiggs loam—80 percent
Minor components—20 percent

Characteristics of Eastbiggs Loam

Slope: 0 to 2 percent
Geomorphic position: Mounds on low terraces
Parent material: Loamy alluvium over clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs and some crops
Surface feature: Some areas have been leveled for agriculture.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Natural hydrology has been modified in areas leveled for agriculture.
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 14 to 40 inches
- *Available water capacity:* Low (about 4.5 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* Very high

Interpretive groups
- *Land capability, irrigated:* 5w-2
- *Land capability, nonirrigated:* 5w-2
- *Storie index:* 22 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A1—0 to 3 inches; loam
- A2—3 to 10 inches; loam
- BAt—10 to 17 inches; loam
- 2Bt—17 to 27 inches; clay
- 3Bqm—27 to 34 inches; duripan
- 3Bq—34 to 60 inches; duripan

Minor Components in Map Unit 130

Galt clay and similar soils
Composition: 9 percent
Slope: 0 to 1 percent
Geomorphic position: Swales on low terraces
Hydric soil status: Hydric

Clayey soils that are 10 to 20 inches deep to a duripan
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Swales on low terraces
Hydric soil status: Hydric

Loamy soils that are 10 to 20 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Swales on low terraces
Hydric soil status: Hydric

Kimball loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 2 percent
Slope: 0 percent
Geomorphic position: Vernal pools on low terraces
Hydric soil status: Hydric

Soils that are rarely flooded
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

133—Eastbiggs-Galt complex, 0 to 3 percent slopes

Map Unit Setting

General location: Central and southern Butte County
Major uses: Livestock grazing, wildlife habitat, watershed, and some cropland
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 65 to 140 feet (21 to 43 meters)
Mean annual precipitation: 21 to 23 inches (533 to 584 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 250 days

Map Unit Composition

Eastbiggs loam—50 percent
Galt clay loam—40 percent
Minor components—10 percent

Characteristics of Eastbiggs Loam

Slope: 0 to 3 percent
Geomorphic position: Mounds on low terraces
Parent material: Loamy alluvium over clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs and some crops
Surface feature: Some areas have been leveled for agriculture.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Natural hydrology has been modified in areas leveled for agriculture.
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 14 to 40 inches
- *Available water capacity:* Low (about 4.5 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* Very high

Interpretive groups
- *Land capability, irrigated:* 5w-2
- *Land capability, nonirrigated:* 5w-2
- *Storie index:* 21 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A1—0 to 3 inches; loam
- A2—3 to 10 inches; loam
- BAt—10 to 17 inches; loam
- 2Bt—17 to 27 inches; clay
- 3Bqm—27 to 34 inches; duripan
- 3Bq—34 to 60 inches; duripan

Characteristics of Galt Clay Loam

Slope: 0 to 3 percent
Geomorphic position: Drainageways and depressions on low terraces
Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs and some crops
Surface feature: Some areas have been leveled for agriculture.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* None
- *Annual ponding frequency:* Frequent

Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Moderate (about 5.2 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 18 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 6 inches; clay loam
Bss1—6 to 20 inches; clay loam
Bss2—20 to 27 inches; clay
Bss3—27 to 30 inches; clay
2Bqm—30 inches; duripan

Minor Components in Map Unit 133

Kimball loam and similar soils
Composition: 3 percent
Slope: 0 to 3 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Esquon clay and similar soils
Composition: 3 percent
Slope: 0 to 3 percent
Geomorphic position: Drainageways and small basins on low terraces
Hydric soil status: Hydric

Wet soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Hydric soil status: Hydric

Wilsoncreek loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

136—Duric Xerarents-Eastbiggs complex, 0 to 1 percent slopes, leveled

Map Unit Setting

General location: Central Butte County
Major uses: Irrigated crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 65 to 140 feet (21 to 43 meters)
Mean annual precipitation: 19 to 23 inches (483 to 584 millimeters)

Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Duric Xerarents, cut—35 percent
Duric Xerarents, fill—30 percent
Eastbiggs fine sandy loam, leveled—25 percent
Minor components—10 percent

Characteristics of Duric Xerarents, Cut

Slope: 0 to 1 percent
Geomorphic position: Cut areas on low terraces
Parent material: Human-altered, clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: The surface has been leveled for agricultural production. A typical pedon rarely occurs in this unit because of cuts and fills during leveling. Only remnant horizons or parts of the original soil remain. Surface horizons have been removed by leveling.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 6 to 21 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 21 inches
Available water capacity: Very low (about 2.3 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 15 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
Bt1—0 to 3 inches; clay loam
Bt2—3 to 8 inches; clay loam
Bt3—8 to 10 inches; clay loam
2Bt4—10 to 13 inches; clay
3Bqm—13 inches; duripan

Characteristics of Duric Xerarents, Fill

Slope: 0 to 1 percent
Geomorphic position: Filled areas on low terraces
Parent material: Human-transported, clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Rice and annual grasses and forbs

Surface features: The surface has been leveled for agricultural production. A typical pedon rarely occurs in this unit because of cuts and fills during leveling. Only remnant horizons or parts of the original soil remain. Human-transported fill has been deposited on natural soil horizons.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 24 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Natural hydrology has been modified by leveling.
Annual flooding frequency: None
Annual ponding frequency: Rare
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 7.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 4w-5
Land capability, nonirrigated: 4w-5
Storie index: 63 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap—0 to 5 inches; clay loam
Btb1—5 to 12 inches; clay loam
Btb2—12 to 16 inches; clay
Bqb—16 to 30 inches; cemented sandy loam
Btb3—30 to 38 inches; sandy clay loam
Btb4—38 to 48 inches; sandy clay loam
2Bqmb—48 inches; duripan

Characteristics of Eastbiggs Fine Sandy Loam, Leveled

Slope: 0 to 1 percent
Geomorphic position: Leveled mounds on low terraces
Parent material: Human-transported, loamy alluvium over clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: The surface has been leveled for agricultural production. A typical pedon rarely occurs in this unit because of cuts and fills during leveling. Only remnant horizons or parts of the original soil remain.
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Natural hydrology has been altered by leveling for agriculture.
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 14 to 40 inches
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 24 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap1—0 to 5 inches; fine sandy loam
Ap2—5 to 12 inches; fine sandy loam
Btb1—12 to 18 inches; sandy clay loam
Btb2—18 to 23 inches; sandy clay loam
Btb3—23 to 26 inches; clay loam
Btb4—26 to 30 inches; clay
2Bqmb—30 inches; duripan

Minor Components in Map Unit 136

Duric Xerarents, cut and fill with gravel, and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Leveled land on low terraces
Hydric soil status: Not hydric

Esquon, human-transported fill overburden, and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Filled drainageways and sloughs on low terraces
Hydric soil status: Hydric

Soils that formed in human-transported fill more than 60 inches thick
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Fill on low terraces
Hydric soil status: Not hydric

138su—Liveoak sandy clay loam, 0 to 2 percent slopes

Map Unit Setting

General location: Northern Sutter County and southern Butte County
Major uses: Irrigated crops and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 15 to 95 feet (6 to 29 meters)
Mean annual precipitation: 17 to 21 inches (432 to 533 millimeters)
Mean annual air temperature: 61 to 64 degrees F (16 to 18 degrees C)
Frost-free period: 240 to 280 days

Map Unit Composition

Liveoak sandy clay loam—85 percent
Minor components—15 percent

Characteristics of Liveoak Sandy Clay Loam

Slope: 0 to 2 percent
Geomorphic position: Low terraces
Parent material: Loamy alluvium derived from igneous and metamorphic rocks

Observed vegetation: Alfalfa and peach, walnut, almond, and prune orchards
Surface feature: Most areas have been leveled for agricultural production.
Texture of the surface layer: Sandy clay loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Because of the protection provided by levees, water very rarely flows into distributary channels.
Annual flooding frequency: Very rare
Annual ponding frequency: None
Depth to a water table (zone of saturation): 11 to 40 inches
Available water capacity: High (about 9.9 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 2s-2
Land capability, nonirrigated: 3s-2
Storie index: 84 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Ap1 and Ap2—0 to 13 inches; sandy clay loam
Bt1, Bt2, and BC—13 to 53 inches; sandy clay loam
C—53 to 60 inches; sandy loam

Minor Components in Map Unit 138su

Liveoak sandy loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Tisdale clay loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Boga loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Loemstone loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Soils that are more than 40 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 2 percent

Geomorphic position: Terraces
Hydric soil status: Not hydric

Gridley taxadjunct clay loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Soils that are more than 40 inches deep to a sandy substratum
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Distributary channels
Hydric soil status: Not hydric

Soils that have a light colored surface layer
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Soils that do not have a water table
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

139su—Liveoak-Galt taxadjuncts complex, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

General location: Northwestern Sutter County and southwestern Butte County
Major uses: Irrigated crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 20 to 65 feet (7 to 20 meters)
Mean annual precipitation: 14 to 20 inches (355 to 508 millimeters)
Mean annual air temperature: 60 to 64 degrees F (16 to 18 degrees C)
Frost-free period: 260 to 280 days

Map Unit Composition

Liveoak taxadjunct loam, frequently flooded—45 percent
Galt taxadjunct clay loam, frequently flooded—40 percent
Minor components—15 percent

Characteristics of Liveoak Taxadjunct Loam, Frequently Flooded

Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Parent material: Loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses, tules, and rice
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Frequent
Annual ponding frequency: None
Depth to a water table (zone of saturation): 48 to 60 inches
Available water capacity: High (about 8.6 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4w-2
Land capability, nonirrigated: 4w-2
Storie index: 31.0 (historical number)
Hydric soil status: Hydric
Hydrologic soil group: B

Typical profile
Ak—0 to 6 inches; loam
Bk and Bkq—6 to 54 inches; loam
Bkqm—54 to 63 inches; duripan
2C—63 to 73 inches; very fine sandy loam

Characteristics of Galt Taxadjunct Clay Loam, Frequently Flooded

Slope: 0 to 2 percent
Geomorphic position: Channels on flood plains
Parent material: Loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses, tules, and rice
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature: 20 to 35 inches to a duripan; 26 to 60 inches to densic material
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Frequent
Annual ponding frequency: None
Depth to a water table (zone of saturation): 12 to 24 inches
Available water capacity: Low (about 4.0 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 14.0 (historical number)
Hydric soil status: Hydric
Hydrologic soil group: C

Typical profile
A1, A2, Bw, and Bk—0 to 21 inches; clay loam
Bkqm—21 to 22 inches; duripan
Ck—22 to 25 inches; loam
B´kqm—25 to 26 inches; duripan
Cd—26 inches; densic material

Minor Components in Map Unit 139su

Galt clay and similar soils
Composition: 4 percent

Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Subaco clay and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Clear Lake clay and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Columbia and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Gridley clay loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Soils that are less than 20 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

143su—Marcum-Gridley clay loams, 0 to 1 percent slopes

Map Unit Setting

General location: Sutter County and southern Butte County
Major uses: Irrigated and nonirrigated crops and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 20 to 80 feet (7 to 25 meters)
Mean annual precipitation: 17 to 20 inches (431 to 508 millimeters)
Mean annual air temperature: 60 to 64 degrees F (16 to 18 degrees C)
Frost-free period: 260 to 280 days

Map Unit Composition

Marcum clay loam—45 percent
Gridley clay loam—40 percent
Minor components—15 percent

Characteristics of Marcum Clay Loam

Slope: 0 to 1 percent
Geomorphic position: Basin rims and terraces
Parent material: Loamy alluvium derived from mixed sources

Observed vegetation: Rice, prune orchards, corn, tomatoes, grain sorghum, safflower, and nonirrigated wheat and barley
Surface feature: Most areas have been leveled for agriculture.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (paralithic bedrock): 40 to 80 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 7.4 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 2s-3
Land capability, nonirrigated: 3s-3
Storie index: 58.0 (historical number)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap or A—0 to 16 inches; clay loam
Bt1—16 to 28 inches; clay loam
Bt2—28 to 40 inches; clay
Bk—40 to 43 inches; clay loam
2Cr—43 to 62 inches; bedrock

Characteristics of Gridley Clay Loam

Slope: 0 to 1 percent
Geomorphic position: Basin rims and terraces
Parent material: Clayey alluvium derived from mixed sources
Observed vegetation: Rice, prune orchards, corn, tomatoes, grain sorghum, safflower, and nonirrigated wheat and barley
Surface feature: Most areas have been leveled for agriculture.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.5 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3s-3
Land capability, nonirrigated: 3s-3
Storie index: 44.0 (historical number)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap and A—0 to 19 inches; clay loam
Bt1 and Bt2—19 to 37 inches; clay
2Cr—37 inches; bedrock

Minor Components in Map Unit 143su

Liveoak and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Tisdale and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Capay and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Basin rims
Hydric soil status: Hydric

Conejo and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Gridley and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Oswald and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Basin rims
Hydric soil status: Hydric

Soils that are frequently ponded
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Basin rims
Hydric soil status: Hydric

149yu—Flanly sandy loam, 8 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Woodland, livestock grazing, homesite development, irrigated pasture, and wildlife habitat
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills

Elevation: 120 to 1,895 feet (38 to 579 meters)
Mean annual precipitation: 22 to 42 inches (559 to 1,067 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 235 to 255 days

Map Unit Composition

Flanly sandy loam—80 percent
Minor components—20 percent

Characteristics of Flanly Sandy Loam

Slope: 8 to 15 percent
Geomorphic position: Hills
Parent material: Residuum weathered from granodiorite
Observed vegetation: Interior live oak, blue oak, foothill pine, brush, annual grasses and forbs, and scattered ponderosa pine
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: 0 to 10 percent stones
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A and BAt—0 to 9 inches; sandy loam
Bt1—9 to 16 inches; loam
Bt2 and Bt3—16 to 34 inches; loam
Cr—34 to 38 inches; bedrock

Minor Components in Map Unit 149yu

Orose and similar soils
Composition: 5 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Rackerby and similar soils
Composition: 5 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Swedesflat and similar soils
Composition: 5 percent
Slope: 8 to 15 percent

Geomorphic position: Hills
Hydric soil status: Not hydric

Verjeles and similar soils
Composition: 5 percent
Slope: 8 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

150—Columbia, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

General location: Western and south-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 65 to 170 feet (20 to 52 meters)
Mean annual precipitation: 19 to 23 inches (483 to 584 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Columbia stratified sand to fine sandy loam—85 percent
Minor components—15 percent

Characteristics of Columbia Stratified Sand to Fine Sandy Loam

Slope: 0 to 2 percent
Geomorphic position: Channels and sloughs on flood plains
Parent material: Stratified, sandy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Riparian species, including California sycamore, willows, black walnut, cottonwood, valley oak, wild grape, shrubs, and grasses
Surface feature: Flooding debris, such as logs, limbs, leaves, and grass, is deposited and moved across the surface annually.
Texture of the surface layer: Stratified sand to fine sandy loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* Frequent
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 20 to 72 inches
- *Available water capacity:* Moderate (about 6.7 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* Very low

Interpretive groups
- *Land capability, irrigated:* 4w-2
- *Land capability, nonirrigated:* 4w-2

Storie index: 35 (revised)
Hydric soil status: Hydric
Hydrologic soil group: C

Typical profile
A—0 to 5 inches; stratified sand to fine sandy loam
C1—5 to 10 inches; stratified silt loam to sandy loam
C2—10 to 29 inches; loam
C3—29 to 37 inches; fine sandy loam
C4—37 to 46 inches; sand
C5—46 to 60 inches; stratified fine sandy loam to fine sand

Minor Components in Map Unit 150

Gianella fine sandy loam, loam, or silt loam and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Hydric

Parrott silt loam and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Hydric

Riverwash
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Gravel bars in channels
Hydric soil status: Hydric

150su—Olashes sandy loam, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Sutter County and southwestern Butte County
Major uses: Irrigated and nonirrigated crops and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 45 to 750 feet (14 to 229 meters)
Mean annual precipitation: 16 to 19 inches (406 to 482 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 250 to 270 days

Map Unit Composition

Olashes sandy loam—85 percent
Minor components—15 percent

Characteristics of Olashes Sandy Loam

Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Parent material: Loamy alluvium derived from mixed sources
Observed vegetation: Almond, walnut, peach, and prune orchards, rice, and dry beans
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: None

Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 1
Land capability, nonirrigated: 3c
Storie index: 86.0 (historical number)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 4 inches; sandy loam
Bt1 and Bt2—4 to 52 inches; sandy clay loam
2C—52 to 60 inches; sand

Minor Components in Map Unit 150su

Oswald and similar soils
Composition: 8 percent
Slope: 0 to 2 percent
Geomorphic position: Basin rims
Hydric soil status: Hydric

Soils that are 40 to 60 inches deep to bedrock or a duripan
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Subaco and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Basin rims
Hydric soil status: Hydric

151yu—Flanly sandy loam, 30 to 50 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Woodland, livestock grazing, and wildlife habitat
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 120 to 1,895 feet (38 to 579 meters)
Mean annual precipitation: 22 to 42 inches (559 to 1,067 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 235 to 255 days

Map Unit Composition

Flanly sandy loam—80 percent
Minor components—20 percent

Characteristics of Flanly Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Hills
Parent material: Residuum weathered from granodiorite
Observed vegetation: Interior live oak, blue oak, foothill pine, brush, annual grasses and forbs, and scattered ponderosa pine
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: 0 to 10 percent stones
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A and BAt—0 to 9 inches; sandy loam
Bt1—9 to 16 inches; loam
Bt2 and Bt3—16 to 34 inches; loam
Cr—34 to 38 inches; soft or weathered bedrock

Minor Components in Map Unit 151yu

Hurleton and similar soils
Composition: 4 percent
Slope: 30 to 40 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Orose and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Rackerby and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Sommeyflat and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Swedesflat and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

152—Gianella fine sandy loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Western and southern Butte County
Major uses: Orchard crops, row crops, wildlife habitat, and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 75 to 160 feet (23 to 49 meters)
Mean annual precipitation: 20 to 22 inches (508 to 559 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Gianella fine sandy loam, frequently flooded—85 percent
Minor components—15 percent

Characteristics of Gianella Fine Sandy Loam, Frequently Flooded

Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Parent material: Stratified, coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Almond, walnut, and prune orchards; wheat; and, in riparian forest areas, valley oak, California boxelder, cottonwood, and willows
Surface feature: Texture of the surface layer varies and may change because of deposition during periods of flooding.
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 20 percent well rounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Frequent
Annual ponding frequency: None
Depth to a water table (zone of saturation): 33 to 80 inches
Available water capacity: High (about 8.8 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 4w-2

Land capability, nonirrigated: 4w-2
Storie index: 66 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
A—0 to 6 inches; fine sandy loam
C1—6 to 15 inches; silt loam
C2—15 to 20 inches; fine sandy loam
C3—20 to 22 inches; silt loam
C4—22 to 27 inches; silt loam
C5—27 to 32 inches; fine sandy loam
C6—32 to 43 inches; fine sandy loam
C7—43 to 64 inches; fine sandy loam
C8—64 to 80 inches; loamy sand

Minor Components in Map Unit 152

Parrott silt loam, frequently flooded, and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Soils that have a gravelly substratum
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Frequently flooded Columbia and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

Gianella fine sandy loam, occasionally flooded, and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

153—Gianella sandy loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Western Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 150 feet (30 to 47 meters)
Mean annual precipitation: 18 to 22 inches (457 to 559 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Gianella sandy loam, frequently flooded—85 percent
Minor components—15 percent

Characteristics of Gianella Sandy Loam, Frequently Flooded

Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Parent material: Stratified, coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Annual grasses and forbs and, in riparian forest areas, valley oak, California boxelder, cottonwoods, and willows
Surface feature: Texture of the surface layer varies and may change because of deposition during periods of flooding.
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: 0 to 20 percent well rounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Frequent
Annual ponding frequency: None
Depth to a water table (zone of saturation): 33 to 80 inches
Available water capacity: Moderate (about 7.0 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 4w-2
Land capability, nonirrigated: 4w-2
Storie index: 63 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
A—0 to 6 inches; sandy loam
C1—6 to 17 inches; sandy loam
C2—17 to 24 inches; sandy loam
C3—24 to 29 inches; sandy loam
C4—29 to 32 inches; loamy sand
C5—32 to 43 inches; fine sandy loam
C6—43 to 57 inches; fine sandy loam
C7—57 to 67 inches; fine sandy loam
C8—67 to 68 inches; fine sandy loam
C9—68 to 71 inches; fine sandy loam
C10—71 to 80 inches; fine sandy loam
C11—80 to 84 inches; fine sandy loam

Minor Components in Map Unit 153

Frequently flooded Columbia and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

Soils that have a gravelly substratum
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Riverwash
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Gravel bars in channels
Hydric soil status: Hydric

Parrott silt loam, frequently flooded, and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

154—Gianella silt loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Western Butte County
Major uses: Orchard crops, row crops, wildlife habitat, and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 160 feet (26 to 49 meters)
Mean annual precipitation: 18 to 22 inches (457 to 559 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Gianella silt loam, frequently flooded—85 percent
Minor components—15 percent

Characteristics of Gianella Silt Loam, Frequently Flooded

Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Parent material: Stratified, coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Walnut, almond, and prune orchards; wheat; and, in riparian forest areas, valley oak, California boxelder, cottonwoods, and willows
Surface feature: Texture of the surface layer varies and may change because of deposition during periods of flooding.
Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: 0 to 20 percent well rounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Frequent
Annual ponding frequency: None
Depth to a water table (zone of saturation): 33 to 80 inches

Available water capacity: High (about 8.8 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 4w-2
Land capability, nonirrigated: 4w-2
Storie index: 66 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
A—0 to 2 inches; silt loam
C1—2 to 8 inches; loamy fine sand
C2—8 to 15 inches; fine sandy loam
C3—15 to 22 inches; very fine sandy loam
C4—22 to 31 inches; very fine sandy loam
C5—31 to 41 inches; very fine sandy loam
C6—41 to 50 inches; silt loam
C7—50 to 54 inches; silt loam
C8—54 to 64 inches; silt loam
C9—64 to 66 inches; silt loam
C10—66 to 69 inches; loam
C11—69 to 83 inches; loamy fine sand

Minor Components in Map Unit 154

Parrott silt loam, frequently flooded, and similar soils
Composition: 9 percent
Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Frequently flooded Columbia and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

Soils that have a gravelly substratum
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Gianella silt loam, occasionally flooded, and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

158—Gianella fine sandy loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Western and southern Butte County
Major uses: Orchard crops, row crops, wildlife habitat, and watershed

Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 65 to 170 feet (21 to 53 meters)
Mean annual precipitation: 19 to 23 inches (483 to 584 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Gianella fine sandy loam, occasionally flooded—85 percent
Minor components—15 percent

Characteristics of Gianella Fine Sandy Loam, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Parent material: Stratified, coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Walnut, almond, and prune orchards; wheat; and, in riparian forest areas, valley oak, California boxelder, cottonwoods, and willows
Surface feature: Texture of the surface layer varies and may change because of deposition during periods of flooding.
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 20 percent medium, well rounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* Occasional
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 33 to 80 inches
- *Available water capacity:* High (about 8.0 inches)
- *Natural drainage class:* Moderately well drained
- *Surface runoff (bare conditions):* Negligible

Interpretive groups
- *Land capability, irrigated:* 2w-2
- *Land capability, nonirrigated:* 3w-2
- *Storie index:* 80 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* A

Typical profile
- Ap—0 to 3 inches; fine sandy loam
- A—3 to 12 inches; fine sandy loam
- C1—12 to 19 inches; loam
- C2—19 to 28 inches; fine sandy loam
- C3—28 to 48 inches; loam
- C4—48 to 57 inches; sandy loam
- C5—57 to 80 inches; loamy sand

Minor Components in Map Unit 158

Parrott silt loam, occasionally flooded, and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Soils that have a gravelly substratum
Composition: 4 percent
Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Frequently flooded Columbia and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

Gianella fine sandy loam, frequently flooded, and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Not hydric

Farwell loam and similar soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Edges of flood plains
Hydric soil status: Not hydric

160—Gianella loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Western and southern Butte County
Major uses: Orchard crops, wildlife habitat, and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 150 feet (30 to 46 meters)
Mean annual precipitation: 20 to 22 inches (515 to 559 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Gianella loam, occasionally flooded—85 percent
Minor components—15 percent

Characteristics of Gianella Loam, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Parent material: Stratified, coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Walnut, almond, and prune orchards and, in riparian forest areas, valley oak, California boxelder, and willows
Surface feature: Texture of the surface layer varies and may change because of deposition during periods of flooding.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 20 percent rounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Occasional
Annual ponding frequency: None
Depth to a water table (zone of saturation): 33 to 80 inches
Available water capacity: High (about 8.3 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 2w-2
Land capability, nonirrigated: 3w-2
Storie index: 80 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Ap—0 to 18 inches; loam
C1—18 to 42 inches; fine sandy loam
C2—42 to 52 inches; fine sandy loam
C3—52 to 70 inches; loamy sand

Minor Components in Map Unit 160

Frequently flooded Columbia and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

Parrott silt loam, occasionally flooded, and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Soils that have a gravelly substratum
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

161—Gianella fine sandy loam, 0 to 1 percent slopes, rarely flooded

Map Unit Setting

General location: Southern Butte County
Major uses: Orchard crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 110 feet (27 to 35 meters)
Mean annual precipitation: 20 to 22 inches (515 to 559 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 250 days

Map Unit Composition

Gianella fine sandy loam, rarely flooded—90 percent
Minor components—10 percent

Characteristics of Gianella Fine Sandy Loam, Rarely Flooded

Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Parent material: Stratified, coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Walnut orchards and valley oak
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 20 percent medium, well rounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Depth to a water table (zone of saturation): 33 to 80 inches
Available water capacity: High (about 8.0 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 2s-4
Land capability, nonirrigated: 3s-4
Storie index: 85 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Ap—0 to 3 inches; fine sandy loam
A—3 to 12 inches; fine sandy loam
C1—12 to 19 inches; loam
C2—19 to 28 inches; fine sandy loam
C3—28 to 48 inches; loam
C4—48 to 57 inches; sandy loam
C5—57 to 80 inches; loamy sand

Minor Components in Map Unit 161

Soils that have a gravelly substratum
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Columbia taxadjunct very fine sandy loam and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

Gianella fine sandy loam, occasionally flooded, and similar soils
Composition: 2 percent
Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

162—Gianella loam, 0 to 1 percent slopes, rarely flooded

Map Unit Setting

General location: Southern Butte County
Major uses: Orchard crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 110 feet (29 to 34 meters)
Mean annual precipitation: 20 inches (515 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 250 days

Map Unit Composition

Gianella loam, rarely flooded—90 percent
Minor components—10 percent

Characteristics of Gianella Loam, Rarely Flooded

Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Parent material: Stratified, coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Walnut orchards and valley oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 20 percent rounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* Rare
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 33 to 80 inches
- *Available water capacity:* High (about 8.3 inches)
- *Natural drainage class:* Moderately well drained
- *Surface runoff (bare conditions):* Negligible

Interpretive groups
- *Land capability, irrigated:* 2s-4
- *Land capability, nonirrigated:* 3s-4
- *Storie index:* 85 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* A

Typical profile
- Ap—0 to 18 inches; loam
- C1—18 to 42 inches; fine sandy loam
- C2—42 to 52 inches; fine sandy loam
- C3—52 to 70 inches; loamy sand

Minor Components in Map Unit 162

Soils that have a gravelly substratum
Composition: 5 percent
Slope: 0 to 1 percent

Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Columbia taxadjunct very fine sandy loam and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

163yu—Holillipah loamy sand, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Irrigated orchard crops and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 30 to 130 feet (10 to 40 meters)
Mean annual precipitation: 18 to 22 inches (457 to 559 millimeters)
Mean annual air temperature: 59 to 66 degrees F (15 to 19 degrees C)
Frost-free period: 250 to 290 days

Map Unit Composition

Holillipah loamy sand—85 percent
Minor components—15 percent

Characteristics of Holillipah Loamy Sand

Slope: 0 to 1 percent
Geomorphic position: Flood plains
Parent material: Sandy alluvium derived from mixed sources
Observed vegetation: Riparian trees, dense brush, and walnut orchards
Texture of the surface layer: Loamy sand
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* Frequent
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 4.7 inches)
- *Natural drainage class:* Somewhat excessively drained
- *Surface runoff (bare conditions):* Very low

Interpretive groups
- *Land capability, irrigated:* 4w-2
- *Land capability, nonirrigated:* 4w-2
- *Storie index:* 12.0 (historical number)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* A

Typical profile
- Ap—0 to 6 inches; loamy sand
- C1 to C8—6 to 66 inches; stratified sand to silt loam

Minor Components in Map Unit 163yu

Columbia and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Occasionally flooded Holillipah and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

Shanghai and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

165yu—Holland-Hoda-Hotaw complex, 2 to 30 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Timber production and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 3,795 feet (610 to 1,158 meters)
Mean annual precipitation: 50 to 75 inches (1,270 to 1,905 millimeters)
Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)
Frost-free period: 160 to 235 days

Map Unit Composition

Holland loam—40 percent
Hoda loam—25 percent
Hotaw loam—20 percent
Minor components—15 percent

Characteristics of Holland Loam

Slope: 2 to 30 percent
Geomorphic position: Granitic mountains
Parent material: Fine-loamy colluvium and residuum derived from granodiorite
Observed vegetation: Mixed conifers, hardwoods, shrubs, grasses, and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.3 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A1 and A2—0 to 15 inches; loam
Bt1 to BCt—15 to 65 inches; clay loam

Characteristics of Hoda Loam

Slope: 2 to 30 percent
Geomorphic position: Granitic mountains
Parent material: Clayey colluvium and residuum weathered from granodiorite
Observed vegetation: Mixed conifers, hardwoods, shrubs, grasses, and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Oi—1 inch to 0; litter and duff.
A—0 to 7 inches; loam
Bt1—7 to 14 inches; loam
Bt2 to BCt—14 to 72 inches; clay

Characteristics of Hotaw Loam

Slope: 2 to 30 percent
Geomorphic position: Granitic mountains
Parent material: Fine-loamy colluvium and residuum derived from granodiorite
Observed vegetation: Mixed conifers, hardwoods, shrubs, grasses, and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed

Available water capacity: Moderate (about 5.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A1 and A2—0 to 12 inches; loam
Bt—12 to 34 inches; sandy clay loam
Cr—34 inches; soft, weathered bedrock

Minor Components in Map Unit 165yu

Chaix and similar soils
Composition: 3 percent
Slope: 2 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Musick and similar soils
Composition: 3 percent
Slope: 2 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Surnuf gravelly loam and similar soils
Composition: 3 percent
Slope: 2 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Altered soils in piles and windrows
Composition: 3 percent
Slope: 2 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Wet soils and seeps
Composition: 3 percent
Slope: 2 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Hydric

173yu—Hotaw-Chawanakee-Holland complex, 8 to 30 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Timber production and wildlife habitat
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,195 to 3,095 feet (365 to 944 meters)
Mean annual precipitation: 50 to 70 inches (1,270 to 1,778 millimeters)

Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)
Frost-free period: 160 to 240 days

Map Unit Composition

Hotaw loam—45 percent
Chawanakee gravelly sandy loam—20 percent
Holland loam—15 percent
Minor components—20 percent

Characteristics of Hotaw Loam

Slope: 8 to 30 percent
Geomorphic position: Granitic mountains
Parent material: Fine-loamy colluvium and residuum weathered from granodiorite
Observed vegetation: Hardwoods, shrubs, and scattered ponderosa pine
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 5.3 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 6e-1
- *Land capability, nonirrigated:* 6e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A1 and A2—0 to 12 inches; loam
- Bt—12 to 34 inches; sandy clay loam
- Cr—34 inches; soft, weathered bedrock

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 8 to 30 percent
Geomorphic position: Granitic mountains
Parent material: Coarse-loamy residuum weathered from granodiorite
Observed vegetation: Hardwoods, shrubs, and scattered ponderosa pine
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very low (about 1.1 inches)
- *Natural drainage class:* Somewhat excessively drained
- *Surface runoff (bare conditions):* Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 5 inches; gravelly sandy loam
Bw1—5 to 11 inches; gravelly sandy loam
Bw2—11 to 19 inches; gravelly sandy loam
Cr—19 inches; bedrock

Characteristics of Holland Loam

Slope: 8 to 30 percent
Geomorphic position: Granitic mountains
Parent material: Fine-loamy colluvium and residuum weathered from granodiorite
Observed vegetation: Ponderosa pine, incense cedar, hardwoods, and shrubs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A1 and A2—0 to 15 inches; loam
Bt1 to BCt—15 to 65 inches; clay loam

Minor Components in Map Unit 173yu

Flanly and similar soils
Composition: 5 percent
Slope: 8 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 5 percent
Slope: 8 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Swedesflat and similar soils
Composition: 5 percent

Slope: 8 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are less than 20 inches deep to bedrock
Composition: 5 percent
Slope: 8 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

175—Farwell clay loam, 0 to 1 percent slopes

Map Unit Setting

General location: Western Butte County
Major uses: Row crops, orchard crops, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 120 to 170 feet (37 to 53 meters)
Mean annual precipitation: 21 to 23 inches (533 to 584 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 250 days

Map Unit Composition

Farwell clay loam, rarely flooded—85 percent
Minor components—15 percent

Characteristics of Farwell Clay Loam, Rarely Flooded

Slope: 0 to 2 percent
Geomorphic position: Margins between distal alluvial fans and flood plains
Parent material: Fine-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Walnut and almond orchards and valley oak
Surface feature: Most areas have been leveled for agriculture.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* Rare
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very high (about 11.7 inches)
- *Natural drainage class:* Moderately well drained
- *Surface runoff (bare conditions):* Very low

Interpretive groups
- *Land capability, irrigated:* 1
- *Land capability, nonirrigated:* 3s-2
- *Storie index:* 75 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Ap—0 to 5 inches; clay loam

ABt—5 to 9 inches; clay loam
Bt1—9 to 18 inches; clay loam
Bt2—18 to 26 inches; clay loam
Bt3—26 to 33 inches; clay loam
2Btb1—33 to 43 inches; clay loam
2Btb2—43 to 57 inches; clay loam
2Btb3—57 to 72 inches; clay loam
3Bwb—72 to 81 inches; loam

Minor Components in Map Unit 175

Gianella fine sandy loam or loam and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Parrott silt loam and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Areas with gravel and coarse sand on the surface
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Not hydric

Conejo clay loam or loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

176—Farwell loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Western Butte County
Major uses: Irrigated crops and orchard crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 150 to 170 feet (46 to 53 meters)
Mean annual precipitation: 21 to 23 inches (533 to 584 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 250 days

Map Unit Composition

Farwell loam, occasionally flooded—85 percent
Minor components—15 percent

Characteristics of Farwell Loam, Occasionally Flooded

Slope: 0 to 2 percent
Geomorphic position: Margins between distal alluvial fans and flood plains

Parent material: Fine-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Almond and walnut orchards and valley oak
Surface feature: Most areas have been leveled for agriculture.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Dams and levees along the Sacramento River and its tributaries, drainage ditches, and leveling for agriculture have altered the hydrology, modifying the frequency and duration of saturation, ponding, and flooding.
Annual flooding frequency: Occasional
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.6 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 2s-2
Land capability, nonirrigated: 3s-2
Storie index: 79 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Ap—0 to 6 inches; loam
A1—6 to 20 inches; loam
A2—20 to 36 inches; loam
Btb—36 to 50 inches; clay loam
Bwb—50 to 60 inches; loam

Minor Components in Map Unit 176

Conejo clay loam and similar soils
Composition: 8 percent
Slope: 0 to 2 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Gianella fine sandy loam and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Parrott silt loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Soils that have a sandy or gravelly substratum
Composition: 1 percent
Slope: 0 to 2 percent

Geomorphic position: Flood plains
Hydric soil status: Not hydric

Areas that have abandoned channels
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Not hydric

176yu—Jocal loam, 8 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Timber production and homesite development
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,695 to 4,195 feet (822 to 1,280 meters)
Mean annual precipitation: 50 to 85 inches (1,270 to 2,159 millimeters)
Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)
Frost-free period: 160 to 230 days

Map Unit Composition

Jocal loam—80 percent
Minor components—20 percent

Characteristics of Jocal Loam

Slope: 8 to 15 percent
Geomorphic position: Metamorphic mountains
Parent material: Fine-loamy colluvium and residuum weathered from metasedimentary rocks
Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* High (about 9.9 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 3e-1
- *Land capability, nonirrigated:* 3e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- A and Bt1—0 to 8 inches; loam
- Bt2 to Bt6—8 to 73 inches; clay loam

Minor Components in Map Unit 176yu

Mariposa and similar soils
Composition: 10 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Sites and similar soils
Composition: 5 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Surnuf, high elevation, and similar soils
Composition: 5 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

177—Farwell silt loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Southwestern Butte County
Major uses: Irrigated row crops and orchard crops, nonirrigated grain and hay, livestock grazing, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 120 feet (29 to 37 meters)
Mean annual precipitation: 18 to 21 inches (457 to 533 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Farwell silt loam, occasionally flooded—85 percent
Minor components—15 percent

Characteristics of Farwell Silt Loam, Occasionally Flooded

Slope: 0 to 2 percent
Geomorphic position: Margins between flood basins and flood plains
Parent material: Silty and loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Annual grasses and forbs, beans, safflower, almond orchards, prune orchards, walnut orchards, and valley oak
Surface feature: Some areas have been leveled for agriculture.
Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Dams and levees along the Sacramento River and its tributaries, drainage ditches, and leveling for agriculture have altered the

hydrology, modifying the frequency and duration of saturation, ponding, and flooding.
Annual flooding frequency: Occasional
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 13.3 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 2s-2
Land capability, nonirrigated: 3s-2
Storie index: 79 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 6 inches; silt loam
ABt—6 to 11 inches; silty clay loam
Btb1—11 to 22 inches; silt loam
Btb2—22 to 33 inches; silty clay loam
Btb3—33 to 39 inches; silty clay loam
Btb4—39 to 49 inches; silt loam
Btb5—49 to 62 inches; loam and silty clay loam

Minor Components in Map Unit 177

Parrott silt loam and similar soils
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Dodgeland silty clay loam and similar soils
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Margins between flood basins and flood plains
Hydric soil status: Hydric

Vermet silt loam and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

Codora silty clay loam and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

Soils that have a sandy substratum
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

Areas with gravel and coarse sand on the surface
Composition: 1 percent

Slope: 0 to 1 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

178—Arbuckle gravelly loam, 0 to 2 percent slopes

Map Unit Setting

General location: Western Butte County
Major uses: Livestock grazing, wildlife habitat, homesite development, and source of gravel
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 110 feet (30 to 34 meters)
Mean annual precipitation: 19 to 21 inches (483 to 533 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Arbuckle gravelly loam—87 percent
Minor components—13 percent

Characteristics of Arbuckle Gravelly Loam

Slope: 0 to 2 percent
Geomorphic position: Low terraces
Parent material: Fine-loamy alluvium over gravelly alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Wild oat, Italian ryegrass, yellow starthistle, filaree, ripgut brome, soft chess, mouse barley, vetch, and curly dock
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 20 percent medium, subrounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* Rare
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* High (about 9.8 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Very low

Interpretive groups
- *Land capability, irrigated:* 2s-4
- *Land capability, nonirrigated:* 3s-4
- *Storie index:* 71 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- A1—0 to 4 inches; gravelly loam
- A2—4 to 9 inches; gravelly loam
- Bt1—9 to 20 inches; gravelly loam
- Bt2—20 to 32 inches; loam
- Bt3—32 to 49 inches; gravelly loam

2Bt4—49 to 68 inches; very gravelly sandy clay loam
2Bt5—68 to 86 inches; very gravelly sandy clay loam

Minor Components in Map Unit 178

Moda taxadjunct loam and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Oroville gravelly fine sandy loam and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Fernandez sandy loam and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Arbuckle gravelly sandy loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Soils that are 40 to 80 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

179—Moda taxadjunct-Arbuckle complex, 0 to 2 percent slopes

Map Unit Setting

General location: Western Butte County
Major uses: Livestock grazing and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 120 feet (30 to 37 meters)
Mean annual precipitation: 19 to 21 inches (483 to 533 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Moda taxadjunct loam—65 percent
Arbuckle gravelly loam—20 percent
Minor components—15 percent

Characteristics of Moda Taxadjunct Loam

Slope: 0 to 2 percent
Geomorphic position: Swales on low terraces

Parent material: Loamy alluvium over clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Soft chess, medusahead, Italian ryegrass, ripgut brome, purple needlegrass, coyote thistle, goldfields, popcorn flower, filaree, and yellow starthistle
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subrounded gravel
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Rare
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Low (about 3.6 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 14 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 2 inches; loam
A2—2 to 6 inches; loam
Bt1—6 to 13 inches; loam
2Bt2—13 to 22 inches; clay
2Bkqm—22 inches; duripan

Characteristics of Arbuckle Gravelly Loam

Slope: 0 to 2 percent
Geomorphic position: Mounds on low terraces
Parent material: Fine-loamy alluvium over gravelly alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Wild oat, Italian ryegrass, yellow starthistle, filaree, ripgut brome, soft chess, mouse barley, vetch, and curly dock
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 20 percent medium, subrounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.8 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 2s-4
Land capability, nonirrigated: 3s-4
Storie index: 71 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A1—0 to 4 inches; gravelly loam
A2—4 to 9 inches; gravelly loam
Bt1—9 to 20 inches; gravelly loam
Bt2—20 to 32 inches; loam
Bt3—32 to 49 inches; gravelly loam
2Bt4—49 to 68 inches; very gravelly sandy clay loam
2Bt5—68 to 86 inches; very gravelly sandy clay loam

Minor Components in Map Unit 179

Dodgeland silty clay loam and similar soils
Composition: 6 percent
Slope: 0 to 1 percent
Geomorphic position: Channels
Hydric soil status: Hydric

Farwell silty clay loam and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Margins between low terraces and flood plains
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 4 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on low terraces
Hydric soil status: Hydric

180—Dodgeland silty clay loam, 0 to 5 percent slopes, occasionally flooded

Map Unit Setting

General location: Western Butte County
Major uses: Nonirrigated and irrigated crops, livestock grazing, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 120 feet (29 to 37 meters)
Mean annual precipitation: 18 to 20 inches (457 to 508 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Dodgeland silty clay loam, occasionally flooded—85 percent
Minor components—15 percent

Characteristics of Dodgeland Silty Clay Loam, Occasionally Flooded

Slope: 0 to 5 percent
Geomorphic position: Flood basins
Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice, safflower, sunflowers, nonirrigated grain crops, soft chess, and filaree
Surface feature: Some areas have been leveled for agriculture.
Texture of the surface layer: Silty clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 80 to 140 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Occasional
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 80 inches
Available water capacity: High (about 9.5 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 43 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
Ap1—0 to 4 inches; silty clay loam
Ap2—4 to 8 inches; silty clay
Bss1—8 to 18 inches; silty clay
Bss2—18 to 33 inches; silty clay
Bss3—33 to 45 inches; silty clay
Bkss—45 to 53 inches; silty clay
2Bw1—53 to 60 inches; silty clay loam
2Bw2—60 to 70 inches; silty clay loam
2Bw3—70 to 80 inches; silty clay loam

Minor Components in Map Unit 180

Vermet silty clay loam and similar soils
Composition: 5 percent
Slope: 0 to 5 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

Parrott silt loam and similar soils
Composition: 3 percent
Slope: 0 to 5 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Edjobe silty clay and similar soils
Composition: 2 percent
Slope: 0 to 5 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Dodgeland silt loam or sandy clay loam, overwash, and similar soils
Composition: 3 percent
Slope: 0 to 5 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Farwell silt loam and similar soils
Composition: 2 percent
Slope: 0 to 5 percent
Geomorphic position: Margins of flood plains and flood basins
Hydric soil status: Not hydric

181—Dodgeland silty clay loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Western Butte County
Major uses: Livestock grazing and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 110 feet (29 to 35 meters)
Mean annual precipitation: 18 to 19 inches (457 to 483 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Dodgeland silty clay loam, frequently flooded—80 percent
Minor components—20 percent

Characteristics of Dodgeland Silty Clay Loam, Frequently Flooded

Slope: 0 to 1 percent
Geomorphic position: Channels on flood basins
Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Fitch spikeweed, Italian ryegrass, filaree, soft chess, and hardstem tule
Surface feature: A few areas have been leveled for agriculture.
Texture of the surface layer: Silty clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 80 to 140 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: Frequent
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 80 inches
Available water capacity: High (about 9.5 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 43 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
Ap1—0 to 4 inches; silty clay loam
Ap2—4 to 8 inches; silty clay
Bss1—8 to 18 inches; silty clay
Bss2—18 to 33 inches; silty clay
Bss3—33 to 45 inches; silty clay
Bkss—45 to 53 inches; silty clay
2Bw1—53 to 60 inches; silty clay loam
2Bw2—60 to 70 inches; silty clay loam
2Bw3—70 to 80 inches; silty clay loam

Minor Components in Map Unit 181

Vermet and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Channels along margins of flood plains and flood basins
Hydric soil status: Hydric

Parrott and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Margins of flood plains and flood basins
Hydric soil status: Not hydric

Farwell silt loam and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Margins of flood plains and flood basins
Hydric soil status: Not hydric

Edjobe and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Areas that have been scoured by flooding
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood basins
Hydric soil status: Hydric

188yu—Mariposa taxadjunct gravelly loam, 15 to 30 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Timber production and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 4,195 feet (610 to 1,280 meters)
Mean annual precipitation: 50 to 80 inches (1,270 to 2,032 millimeters)
Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)
Frost-free period: 160 to 230 days

Map Unit Composition

Mariposa taxadjunct gravelly loam—80 percent
Minor components—20 percent

Characteristics of Mariposa Taxadjunct Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Metamorphic mountains
Parent material: Gravelly and loamy colluvium derived from metamorphic rocks
Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (lithic bedrock): 15 to 35 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 2.7 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 4e-1
- *Land capability, nonirrigated:* 4e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A—0 to 4 inches; gravelly loam
- Bt1 to Bt3—4 to 23 inches; gravelly clay loam
- R—23 inches; bedrock

Minor Components in Map Unit 188yu

Rock outcrop
Composition: 10 percent
Slope: 15 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Jocal and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Sites and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

189—Esquon silt loam, 0 to 1 percent slopes, overwash

Map Unit Setting

General location: Southwestern Butte County
Major uses: Irrigated cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 65 to 75 feet (21 to 24 meters)
Mean annual precipitation: 19 inches (483 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Esquon silt loam, overwash—90 percent
Minor components—10 percent

Characteristics of Esquon Silt Loam, Overwash

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Silty alluvium over clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: Overwash originating from the Cherokee Gold Mine occurs as layers of silt loam and very fine loamy sand that buried the natural surface layer of clay. The surface has been laser-leveled for rice production.
Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Rare
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 60 inches
Available water capacity: High (about 9.8 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 49 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
Ap1—0 to 4 inches; silt loam
Ap2—4 to 9 inches; silt loam
C—9 to 15 inches; stratified very fine sandy loam to silt loam
Bssb1—15 to 35 inches; silty clay
Bssb2—35 to 48 inches; silty clay
Bkb—48 to 60 inches; silty clay loam
2Bkqmb—60 inches; duripan

Minor Components in Map Unit 189

Neerdobe silt loam, overwash, and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that are less than 40 inches deep to a duripan
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that have overwash as much as 30 inches thick
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

189yu—Mariposa taxadjunct gravelly loam, 30 to 50 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Timber production and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 4,195 feet (610 to 1,280 meters)
Mean annual precipitation: 50 to 80 inches (1,270 to 2,032 millimeters)
Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)
Frost-free period: 160 to 230 days

Map Unit Composition

Mariposa taxadjunct gravelly loam—80 percent
Minor components—20 percent

Characteristics of Mariposa Taxadjunct Gravelly Loam

Slope: 30 to 50 percent

Geomorphic position: Metamorphic mountains
Parent material: Gravelly and loamy colluvium derived from metamorphic rocks
Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (lithic bedrock): 15 to 35 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 2.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 4 inches; gravelly loam
Bt1 to Bt3—4 to 23 inches; gravelly clay loam
R—23 inches; bedrock

Minor Components in Map Unit 189yu

Rock outcrop
Composition: 10 percent
Slope: 30 to 50 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Sites and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Surnuf and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

196yu—Mildred cobbly loam, 30 to 50 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,495 to 3,240 feet (457 to 988 meters)
Mean annual precipitation: 35 to 62 inches (889 to 1,574 millimeters)

Mean annual air temperature: 55 to 59 degrees F (13 to 15 degrees C)
Frost-free period: 190 to 230 days

Map Unit Composition

Mildred cobbly loam—80 percent
Minor components—20 percent

Characteristics of Mildred Cobbly Loam

Slope: 30 to 50 percent
Geomorphic position: Mountains
Parent material: Clayey colluvium and residuum weathered from intrusive igneous rocks
Observed vegetation: Interior live oak, MacNab cypress, brush, grasses, and scattered black oak and ponderosa pine
Texture of the surface layer: Cobbly loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 3.3 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 7e-1
- *Land capability, nonirrigated:* 7e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* D

Typical profile
- A—0 to 3 inches; cobbly loam
- Bt—3 to 9 inches; cobbly clay loam
- 2Bt and 2BCt—9 to 23 inches; clay
- 2Cr—23 inches; bedrock

Minor Components in Map Unit 196yu

Surnuf and similar soils
Composition: 10 percent
Slope: 30 to 50 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Flanly and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Fine textured soils that are 10 to 20 or 40 to 60 inches deep
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

200—Parrott silt loam, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

General location: Western Butte County
Major uses: Orchard crops, nonirrigated crops, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 155 feet (30 to 48 meters)
Mean annual precipitation: 18 to 22 inches (457 to 559 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Parrott silt loam, occasionally flooded—85 percent
Minor components—15 percent

Characteristics of Parrott Silt Loam, Occasionally Flooded

Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Parent material: Silty alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Walnut and almond orchards, safflower, wheat, valley oak, cottonwood, California wild grape, Pacific poison oak, blue elderberry, coyote brush, and creeping wildrye
Surface features: Most areas have been leveled for agriculture. Natural bar-and-channel topography remains in some areas.
Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Dams and levees along the Sacramento River and its tributaries, drainage ditches, and leveling for agriculture have altered the hydrology, modifying the frequency and duration of saturation, ponding, and flooding. During exceptionally wet winters, the water table may be as high as 8 to 30 inches from December through March.
- *Annual flooding frequency:* Occasional
- *Annual ponding frequency:* Occasional
- *Depth to a water table (zone of saturation):* 60 to 89 inches
- *Available water capacity:* Very high (about 11.1 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Very low

Interpretive groups
- *Land capability, irrigated:* 3w-2
- *Land capability, nonirrigated:* 3w-2
- *Storie index:* 83 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- A1—0 to 2 inches; silt loam
- A2—2 to 8 inches; silt loam

Bw1—8 to 20 inches; silt loam
Bw2—20 to 37 inches; silt loam
Bw3—37 to 49 inches; silt loam
Bw4—49 to 63 inches; silt loam
C—63 to 89 inches; silt loam

Minor Components in Map Unit 200

Gianella fine sandy loam or loam and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Kusalslough silty clay loam and similar soils
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Margins between alluvial fans and flood plains
Hydric soil status: Not hydric

Vermet silt loam and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

Conejo clay loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans adjacent to flood plains
Hydric soil status: Not hydric

Soils that have stratified textures
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Filled channels on flood plains
Hydric soil status: Hydric

201—Parrott silt loam, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

General location: Western Butte County
Major uses: Orchard crops, nonirrigated crops, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 170 feet (27 to 52 meters)
Mean annual precipitation: 18 to 23 inches (457 to 584 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Parrott silt loam, frequently flooded—85 percent
Minor components—15 percent

Characteristics of Parrott Silt Loam, Frequently Flooded

Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Parent material: Silty alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Walnut and almond orchards, safflower, wheat, valley oak, cottonwood, California wild grape, Pacific poison oak, blue elderberry, coyote brush, and creeping wildrye
Surface features: Most areas have been leveled for agriculture. Natural bar-and-channel topography remains in some areas.
Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding. During exceptionally wet winters, the water table may be as high as 8 to 30 inches from December through March.
Annual flooding frequency: Frequent
Annual ponding frequency: Occasional
Depth to a water table (zone of saturation): 60 to 89 inches
Available water capacity: Very high (about 11.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 4w-2
Land capability, nonirrigated: 4w-2
Storie index: 65 (revised)
Hydric soil status: Hydric
Hydrologic soil group: B

Typical profile
A1—0 to 2 inches; silt loam
A2—2 to 8 inches; silt loam
Bw1—8 to 20 inches; silt loam
Bw2—20 to 37 inches; silt loam
Bw3—37 to 49 inches; silt loam
Bw4—49 to 63 inches; silt loam
C—63 to 89 inches; silt loam

Minor Components in Map Unit 201

Gianella fine sandy loam or loam and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Hydric

Kusalslough silty clay loam and similar soils
Composition: 5 percent
Slope: 0 to 2 percent

Geomorphic position: Margins of flood basins, alluvial fans, and flood plains
Hydric soil status: Hydric

Soils that formed in stratified fill
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Abandoned channels on flood plains
Hydric soil status: Hydric

Conejo clay loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

203—Kusalslough silty clay loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Northwestern Butte County
Major uses: Orchard crops and row crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 120 to 140 feet (37 to 43 meters)
Mean annual precipitation: 21 to 22 inches (533 to 559 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Kusalslough silty clay loam, occasionally flooded—85 percent
Minor components—15 percent

Characteristics of Kusalslough Silty Clay Loam, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood plains
Parent material: Silty alluvium over clayey alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Almond and walnut orchards and row crops
Texture of the surface layer: Silty clay loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Occasional
Annual ponding frequency: Occasional
Depth to a water table (zone of saturation): 14 to 72 inches
Available water capacity: Very high (about 10.7 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 2w-2
Land capability, nonirrigated: 3w-2

Storie index: 62 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap1—0 to 4 inches; silty clay loam
Ap2—4 to 12 inches; silty clay loam
Bw—12 to 21 inches; silty clay loam
Ab—21 to 31 inches; silty clay loam
Bwb1—31 to 41 inches; silty clay loam
Bwb2—41 to 57 inches; silty clay
Bwb3—57 to 69 inches; silty clay
Bwb4—69 to 80 inches; silty clay

Minor Components in Map Unit 203

Bosquejo silt loam, overwash, occasionally flooded, and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

Bosquejo clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Interfan basins
Hydric soil status: Not hydric

Busacca clay loam and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Parrott silt loam, occasionally flooded, and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

205—Parrott-Vermet complex, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

General location: Western Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 140 feet (26 to 44 meters)
Mean annual precipitation: 18 to 22 inches (457 to 559 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Parrott silt loam, frequently flooded—50 percent

Vermet silt loam, frequently flooded—35 percent
Minor components—15 percent

Characteristics of Parrott Silt Loam, Frequently Flooded

Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Parent material: Silty alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Valley oak, cottonwood, California wild grape, Pacific poison oak, blue elderberry, coyote brush, and creeping wildrye
Surface features: Most areas have been leveled for agriculture. Natural bar-and-channel topography remains in some areas.
Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding. During exceptionally wet winters, the water table may be as high as 8 to 30 inches from December through March.
- *Annual flooding frequency:* Frequent
- *Annual ponding frequency:* Occasional
- *Depth to a water table (zone of saturation):* 60 to 89 inches
- *Available water capacity:* Very high (about 11.1 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Very low

Interpretive groups
- *Land capability, irrigated:* 4w-2
- *Land capability, nonirrigated:* 4w-2
- *Storie index:* 65 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* B

Typical profile
- A1—0 to 2 inches; silt loam
- A2—2 to 8 inches; silt loam
- Bw1—8 to 20 inches; silt loam
- Bw2—20 to 37 inches; silt loam
- Bw3—37 to 49 inches; silt loam
- Bw4—49 to 63 inches; silt loam
- C—63 to 89 inches; silt loam

Characteristics of Vermet Silt Loam, Frequently Flooded

Slope: 0 to 2 percent
Geomorphic position: Channels on flood plains
Parent material: Silty alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Valley oak, cottonwood, California wild grape, Pacific poison oak, blue elderberry, coyote brush, and creeping wildrye
Surface features: The surface has been leveled for agriculture. Natural bar-and-channel topography remains in some areas.

Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: 0 to 20 percent fine, well rounded gravel
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding. During exceptionally wet winters, the water table may be as high as 8 to 30 inches from December through March.
Annual flooding frequency: Frequent
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 80 inches
Available water capacity: Very high (about 11.6 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 34 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 2 inches; silt loam
A2—2 to 8 inches; silt loam
A3—8 to 13 inches; silt loam
Bw1—13 to 16 inches; silty clay loam
Bw2—16 to 26 inches; silty clay loam
Bw3—26 to 41 inches; silty clay loam
Bw4—41 to 62 inches; silty clay loam
Bw5—62 to 72 inches; silty clay loam

Minor Components in Map Unit 205

Columbia sand and similar soils
Composition: 8 percent
Slope: 0 to 2 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

Riverwash
Composition: 7 percent
Slope: 0 to 2 percent
Geomorphic position: Gravel bars in channels
Hydric soil status: Hydric

206—Islandbar-Chawanakee complex, 3 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County

Major uses: Timber production, homesite development, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,400 to 2,795 feet (732 to 853 meters)
Mean annual precipitation: 50 to 60 inches (1,270 to 1,524 millimeters)
Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)
Frost-free period: 190 to 235 days

Map Unit Composition

Islandbar sandy loam—60 percent
Chawanakee gravelly sandy loam—30 percent
Minor components—10 percent

Characteristics of Islandbar Sandy Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Parent material: Coarse-loamy residuum weathered from quartz diorite or trondhjemite
Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 5 inches; sandy loam
A2—5 to 9 inches; sandy loam
Bw1—9 to 27 inches; sandy loam
Bw2—27 to 36 inches; sandy loam
Bw3—36 to 47 inches; sandy loam
Bw4—47 to 58 inches; sandy loam
C1—58 to 62 inches; loamy sand
C2—62 to 72 inches; extremely gravelly loamy sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Parent material: Coarse-loamy residuum weathered from quartz diorite or trondhjemite
Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, incense

cedar, sugar pine, California black oak, Douglas-fir, deerbrush, and California buckthorn
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 5 inches; gravelly sandy loam
Bw1—5 to 11 inches; gravelly sandy loam
Bw2—11 to 19 inches; gravelly sandy loam
Cr—19 inches; bedrock

Minor Components in Map Unit 206

Rock outcrop
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Featherfalls sandy loam and similar soils
Composition: 2 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock
Composition: 2 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

207—Islandbar-Chawanakee complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, homesite development, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,200 to 3,040 feet (671 to 927 meters)
Mean annual precipitation: 50 to 65 inches (1,270 to 1,651 millimeters)
Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)
Frost-free period: 190 to 235 days

Map Unit Composition

Islandbar sandy loam—60 percent
Chawanakee gravelly sandy loam—30 percent
Minor components—10 percent

Characteristics of Islandbar Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Parent material: Coarse-loamy residuum and colluvium derived from trondhjemite or quartz diorite
Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 5.7 inches)
- *Natural drainage class:* Somewhat excessively drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 6e-1
- *Land capability, nonirrigated:* 6e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* A

Typical profile
- Oi—0 to 2 inches; slightly decomposed plant material
- A1—2 to 5 inches; sandy loam
- A2—5 to 9 inches; sandy loam
- Bw1—9 to 27 inches; sandy loam
- Bw2—27 to 36 inches; sandy loam
- Bw3—36 to 47 inches; sandy loam

Bw4—47 to 58 inches; sandy loam
C1—58 to 62 inches; loamy sand
C2—62 to 72 inches; extremely gravelly loamy sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Parent material: Coarse-loamy residuum and colluvium weathered from trondhjemite or quartz diorite
Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, incense cedar, sugar pine, California black oak, Douglas-fir, deerbrush, and California buckthorn
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 5 inches; gravelly sandy loam
Bw1—5 to 11 inches; gravelly sandy loam
Bw2—11 to 19 inches; gravelly sandy loam
Cr—19 inches; bedrock

Minor Components in Map Unit 207

Rock outcrop
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock
Composition: 3 percent
Slope: 15 to 30 percent

Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Hydric soil status: Not hydric

Featherfalls sandy loam and similar soils
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Hydric soil status: Not hydric

208—Islandbar-Chawanakee complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,115 to 2,765 feet (646 to 844 meters)
Mean annual precipitation: 50 to 65 inches (1,270 to 1,651 millimeters)
Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)
Frost-free period: 190 to 235 days

Map Unit Composition

Islandbar sandy loam—60 percent
Chawanakee gravelly sandy loam—30 percent
Minor components—10 percent

Characteristics of Islandbar Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy colluvium derived from trondhjemite or quartz diorite
Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 5 inches; sandy loam
A2—5 to 9 inches; sandy loam
Bw1—9 to 27 inches; sandy loam
Bw2—27 to 36 inches; sandy loam
Bw3—36 to 47 inches; sandy loam
Bw4—47 to 58 inches; sandy loam
C1—58 to 62 inches; loamy sand
C2—62 to 72 inches; extremely gravelly loamy sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy residuum and colluvium weathered from trondhjemite or quartz diorite
Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, incense cedar, sugar pine, California black oak, Douglas-fir, deerbrush, and California buckthorn
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 5 inches; gravelly sandy loam
Bw1—5 to 11 inches; gravelly sandy loam
Bw2—11 to 19 inches; gravelly sandy loam
Cr—19 inches; bedrock

Minor Components in Map Unit 208

Rock outcrop
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock
Composition: 3 percent

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Featherfalls sandy loam and similar soils
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

209—Islandbar-Chawanakee complex, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,715 to 2,000 feet (524 to 610 meters)
Mean annual precipitation: 55 to 60 inches (1,397 to 1,524 millimeters)
Mean annual air temperature: 57 degrees F (14 degrees C)
Frost-free period: 220 days

Map Unit Composition

Islandbar sandy loam—60 percent
Chawanakee gravelly sandy loam—30 percent
Minor components—10 percent

Characteristics of Islandbar Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on granitic mountains
Parent material: Coarse-loamy colluvium derived from trondhjemite
Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 5 inches; sandy loam
A2—5 to 9 inches; sandy loam
Bw1—9 to 27 inches; sandy loam
Bw2—27 to 36 inches; sandy loam
Bw3—36 to 47 inches; sandy loam
Bw4—47 to 58 inches; sandy loam
C1—58 to 62 inches; loamy sand
C2—62 to 72 inches; extremely gravelly loamy sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on granitic mountains
Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite
Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, incense cedar, sugar pine, California black oak, Douglas-fir, deerbrush, and California buckthorn
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 5 inches; gravelly sandy loam
Bw1—5 to 11 inches; gravelly sandy loam
Bw2—11 to 19 inches; gravelly sandy loam
Cr—19 inches; bedrock

Minor Components in Map Unit 209

Rock outcrop
Composition: 4 percent
Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on granitic mountains
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on granitic mountains
Hydric soil status: Not hydric

Featherfalls sandy loam and similar soils
Composition: 1 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on granitic mountains
Hydric soil status: Not hydric

210—Featherfalls-Islandbar complex, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, wildlife habitat, watershed, and homesite development
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 2,995 feet (610 to 914 meters)
Mean annual precipitation: 50 to 60 inches (1,270 to 1,524 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 180 to 235 days

Map Unit Composition

Featherfalls sandy loam—50 percent
Islandbar sandy loam—35 percent
Minor components—15 percent

Characteristics of Featherfalls Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic mountains
Parent material: Fine-loamy colluvium and residuum weathered from trondhjemite or quartz diorite
Observed vegetation: Douglas-fir, ponderosa pine, California black oak, incense cedar, Pacific madrone, tanoak, Pacific poison oak, California honeysuckle, and whiteleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 25 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 4 inches; sandy loam
A2—4 to 7 inches; sandy loam
Bt1—7 to 17 inches; sandy clay loam
Bt2—17 to 24 inches; sandy clay loam
Bt3—24 to 32 inches; sandy clay loam
Bt4—32 to 42 inches; sandy clay loam
BCt1—42 to 61 inches; paracobbly sandy clay loam
BCt2—61 to 72 inches; paracobbly sandy clay loam
Crt—72 to 80 inches; very paragravelly sandy clay loam

Characteristics of Islandbar Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic mountains
Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite or quartz diorite
Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 5 inches; sandy loam
A2—5 to 9 inches; sandy loam
Bw1—9 to 27 inches; sandy loam

Bw2—27 to 36 inches; sandy loam
Bw3—36 to 47 inches; sandy loam
Bw4—47 to 58 inches; sandy loam
C1—58 to 62 inches; loamy sand
C2—62 to 72 inches; extremely gravelly loamy sand

Minor Components in Map Unit 210

Fine-loamy soils that are 40 to 60 inches deep to densic bedrock
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are 40 to 60 inches deep to densic bedrock
Composition: 4 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic mountains
Hydric soil status: Not hydric

Haploxerults, fine-loamy, more than 35 percent clay in the subsoil, and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic mountains
Hydric soil status: Not hydric

Chawanakee and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are underlain by paralithic bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic mountains
Hydric soil status: Not hydric

211—Featherfalls-Islandbar complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, wildlife habitat, watershed, and homesite development
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 3,175 feet (610 to 968 meters)
Mean annual precipitation: 50 to 65 inches (1,270 to 1,651 millimeters)
Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)
Frost-free period: 180 to 235 days

Map Unit Composition

Featherfalls sandy loam—50 percent
Islandbar sandy loam—35 percent
Minor components—15 percent

Characteristics of Featherfalls Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Fine-loamy colluvium derived from trondhjemite or quartz diorite
Observed vegetation: Douglas-fir, ponderosa pine, California black oak, incense cedar, Pacific madrone, tanoak, Pacific poison oak, California honeysuckle, and whiteleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 25 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 4 inches; sandy loam
A2—4 to 7 inches; sandy loam
Bt1—7 to 17 inches; sandy clay loam
Bt2—17 to 24 inches; sandy clay loam
Bt3—24 to 32 inches; sandy clay loam
Bt4—32 to 42 inches; sandy clay loam
BCt1—42 to 61 inches; paracobbly sandy clay loam
BCt2—61 to 72 inches; paracobbly sandy clay loam
Crt—72 to 80 inches; very paragravelly sandy clay loam

Characteristics of Islandbar Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy colluvium derived from trondhjemite or quartz diorite
Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 5 inches; sandy loam
A2—5 to 9 inches; sandy loam
Bw1—9 to 27 inches; sandy loam
Bw2—27 to 36 inches; sandy loam
Bw3—36 to 47 inches; sandy loam
Bw4—47 to 58 inches; sandy loam
C1—58 to 62 inches; loamy sand
C2—62 to 72 inches; extremely gravelly loamy sand

Minor Components in Map Unit 211

Fine-loamy soils that are 40 to 60 inches deep to densic bedrock
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are 40 to 60 inches deep to densic bedrock
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Haploxerults, fine-loamy, more than 35 percent clay in the subsoil, and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Chawanakee and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are underlain by paralithic bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

212—Featherfalls-Islandbar complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,840 to 2,995 feet (561 to 914 meters)
Mean annual precipitation: 50 to 65 inches (1,270 to 1,651 millimeters)
Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)
Frost-free period: 170 to 235 days

Map Unit Composition

Featherfalls sandy loam—50 percent
Islandbar sandy loam—35 percent
Minor components—15 percent

Characteristics of Featherfalls Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Fine-loamy colluvium and residuum weathered from trondhjemite or quartz diorite
Observed vegetation: Douglas-fir, ponderosa pine, California black oak, incense cedar, Pacific madrone, tanoak, Pacific poison oak, California honeysuckle, and whiteleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 25 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 4 inches; sandy loam
A2—4 to 7 inches; sandy loam
Bt1—7 to 17 inches; sandy clay loam
Bt2—17 to 24 inches; sandy clay loam
Bt3—24 to 32 inches; sandy clay loam
Bt4—32 to 42 inches; sandy clay loam
BCt1—42 to 61 inches; paracobbly sandy clay loam

BCt2—61 to 72 inches; paracobbly sandy clay loam
Crt—72 to 80 inches; very paragravelly sandy clay loam

Characteristics of Islandbar Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite or quartz diorite
Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 5 inches; sandy loam
A2—5 to 9 inches; sandy loam
Bw1—9 to 27 inches; sandy loam
Bw2—27 to 36 inches; sandy loam
Bw3—36 to 47 inches; sandy loam
Bw4—47 to 58 inches; sandy loam
C1—58 to 62 inches; loamy sand
C2—62 to 72 inches; extremely gravelly loamy sand

Minor Components in Map Unit 212

Fine-loamy soils that are 40 to 60 inches deep to densic bedrock
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are 40 to 60 inches deep to densic bedrock
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Haploxerults, fine-loamy, more than 35 percent clay in the subsoil, and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Chawanakee and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are underlain by paralithic bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

213—Featherfalls-Islandbar complex, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 895 to 3,020 feet (274 to 922 meters)
Mean annual precipitation: 50 to 65 inches (1,270 to 1,651 millimeters)
Mean annual air temperature: 54 to 57 degrees F (12 to 14 degrees C)
Frost-free period: 170 to 235 days

Map Unit Composition

Featherfalls sandy loam—45 percent
Islandbar sandy loam—35 percent
Minor components—20 percent

Characteristics of Featherfalls Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Fine-loamy colluvium and residuum weathered from trondhjemite or quartz diorite
Observed vegetation: Douglas-fir, ponderosa pine, California black oak, incense cedar, Pacific madrone, tanoak, Pacific poison oak, California honeysuckle, and whiteleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 25 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: High (about 8.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 4 inches; sandy loam
A2—4 to 7 inches; sandy loam
Bt1—7 to 17 inches; sandy clay loam
Bt2—17 to 24 inches; sandy clay loam
Bt3—24 to 32 inches; sandy clay loam
Bt4—32 to 42 inches; sandy clay loam
BCt1—42 to 61 inches; paracobbly sandy clay loam
BCt2—61 to 72 inches; paracobbly sandy clay loam
Crt—72 to 80 inches; very paragravelly sandy clay loam

Characteristics of Islandbar Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite or quartz diorite
Observed vegetation: Ponderosa pine, incense cedar, canyon live oak, tanoak, Douglas-fir, California black oak, Pacific poison oak, whiteleaf manzanita, deerbrush, and toyon
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 5 inches; sandy loam
A2—5 to 9 inches; sandy loam
Bw1—9 to 27 inches; sandy loam
Bw2—27 to 36 inches; sandy loam

Bw3—36 to 47 inches; sandy loam
Bw4—47 to 58 inches; sandy loam
C1—58 to 62 inches; loamy sand
C2—62 to 72 inches; extremely gravelly loamy sand

Minor Components in Map Unit 213

Chawanakee and similar soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to densic bedrock
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are 40 to 60 inches deep to densic bedrock
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are underlain by paralithic bedrock
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Haploxerults, fine-loamy, more than 35 percent clay in the subsoil, and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

214—Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 2 to 15 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Wildlife habitat, watershed, homesite development, and recreation
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 895 to 2,595 feet (274 to 792 meters)
Mean annual precipitation: 40 to 55 inches (1,016 to 1,397 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Crystalhill gravelly coarse sandy loam—35 percent
Oregongulch gravelly sandy loam—20 percent
Craigsaddle coarse sandy loam—20 percent

Rock outcrop—10 percent
Minor components—15 percent

Characteristics of Crystalhill Gravelly Coarse Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic hills
Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite
Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel
Depth to a restrictive feature (densic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 5.0 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 7 inches; gravelly coarse sandy loam
Bw1—7 to 14 inches; gravelly coarse sandy loam
Bw2—14 to 22 inches; gravelly coarse sandy loam
Bw3—22 to 33 inches; gravelly sandy loam
Bw4—33 to 44 inches; gravelly sandy loam
BC—44 to 66 inches; sandy loam
Cdt—66 inches; bedrock

Characteristics of Oregongulch Gravelly Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic hills
Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite
Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 40 percent medium, angular gravel
Depth to a restrictive feature (densic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly sandy loam
Bw1—4 to 7 inches; gravelly sandy loam
Bw2—7 to 13 inches; gravelly sandy loam
Bw3—13 to 18 inches; gravelly sandy loam
C—18 to 24 inches; very gravelly sandy loam
Cdt—24 to 60 inches; bedrock

Characteristics of Craigsaddle Coarse Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic hills
Parent material: Fine-loamy colluvium and residuum weathered from trondhjemite
Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws
Texture of the surface layer: Coarse sandy loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel
Depth to a restrictive feature (densic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 5 inches; coarse sandy loam
Bw1—5 to 11 inches; sandy loam
Bw2—11 to 17 inches; sandy loam
Bw3—17 to 21 inches; sandy loam
Bt1—21 to 31 inches; sandy loam
Bt2—31 to 51 inches; sandy loam
BCt—51 to 58 inches; gravelly sandy loam
Cdt—58 to 80 inches; bedrock

Characteristics of Rock Outcrop

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic hills
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 214

Stony or bouldery soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic hills
Hydric soil status: Not hydric

Aquic Haploxerepts, coarse-loamy, and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Drainageways on granitic hills
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to paralithic bedrock
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic hills
Hydric soil status: Not hydric

Alluvial soils in riparian areas
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Drainageways on granitic hills
Hydric soil status: Not hydric

Lamellic Haploxerepts with densic bedrock at a depth of 40 to 60 inches and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic hills
Hydric soil status: Not hydric

Soils that are more than 60 inches deep to densic bedrock
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on granitic hills
Hydric soil status: Not hydric

215—Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 15 to 30 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Wildlife habitat, watershed, homesite development, and recreation
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 895 to 2,000 feet (274 to 610 meters)
Mean annual precipitation: 40 to 55 inches (1,016 to 1,397 millimeters)

Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Crystalhill gravelly coarse sandy loam—35 percent
Oregongulch gravelly sandy loam—20 percent
Craigsaddle coarse sandy loam—20 percent
Rock outcrop—10 percent
Minor components—15 percent

Characteristics of Crystalhill Gravelly Coarse Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite
Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel
Depth to a restrictive feature (densic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 5.0 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 7 inches; gravelly coarse sandy loam
Bw1—7 to 14 inches; gravelly coarse sandy loam
Bw2—14 to 22 inches; gravelly coarse sandy loam
Bw3—22 to 33 inches; gravelly sandy loam
Bw4—33 to 44 inches; gravelly sandy loam
BC—44 to 66 inches; sandy loam
Cdt—66 inches; bedrock

Characteristics of Oregongulch Gravelly Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite
Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws
Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 5 to 40 percent medium, angular gravel
Depth to a restrictive feature (densic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly sandy loam
Bw1—4 to 7 inches; gravelly sandy loam
Bw2—7 to 13 inches; gravelly sandy loam
Bw3—13 to 18 inches; gravelly sandy loam
C—18 to 24 inches; very gravelly sandy loam
Cdt—24 to 60 inches; bedrock

Characteristics of Craigsaddle Coarse Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Parent material: Fine-loamy colluvium and residuum weathered from trondhjemite
Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws
Texture of the surface layer: Coarse sandy loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel
Depth to a restrictive feature (densic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 5 inches; coarse sandy loam

Bw1—5 to 11 inches; sandy loam
Bw2—11 to 17 inches; sandy loam
Bw3—17 to 21 inches; sandy loam
Bt1—21 to 31 inches; sandy loam
Bt2—31 to 51 inches; sandy loam
BCt—51 to 58 inches; gravelly sandy loam
Cdt—58 to 80 inches; bedrock

Characteristics of Rock Outcrop

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 215

Haploxeralfs, fine, and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Lamellic Haploxerepts, coarse-loamy, more than 60 inches deep to densic bedrock, and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Coarse-loamy soils that are 10 to 20 inches deep to bedrock
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to densic bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

216—Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 30 to 50 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Wildlife habitat, watershed, and recreation
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 895 to 2,000 feet (274 to 610 meters)
Mean annual precipitation: 40 to 55 inches (1,016 to 1,397 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Crystalhill gravelly coarse sandy loam—35 percent
Oregongulch gravelly sandy loam—20 percent
Craigsaddle coarse sandy loam—20 percent
Rock outcrop—10 percent
Minor components—15 percent

Characteristics of Crystalhill Gravelly Coarse Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic hills
Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite
Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel
Depth to a restrictive feature (densic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 5.0 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 7 inches; gravelly coarse sandy loam
Bw1—7 to 14 inches; gravelly coarse sandy loam
Bw2—14 to 22 inches; gravelly coarse sandy loam
Bw3—22 to 33 inches; gravelly sandy loam
Bw4—33 to 44 inches; gravelly sandy loam
BC—44 to 66 inches; sandy loam
Cdt—66 inches; bedrock

Characteristics of Oregongulch Gravelly Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic hills
Parent material: Coarse-loamy colluvium and residuum weathered from trondhjemite
Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 40 percent medium, angular gravel

Depth to a restrictive feature (densic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly sandy loam
Bw1—4 to 7 inches; gravelly sandy loam
Bw2—7 to 13 inches; gravelly sandy loam
Bw3—13 to 18 inches; gravelly sandy loam
C—18 to 24 inches; very gravelly sandy loam
Cdt—24 to 60 inches; bedrock

Characteristics of Craigsaddle Coarse Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic hills
Parent material: Fine-loamy colluvium and residuum weathered from trondhjemite
Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws
Texture of the surface layer: Coarse sandy loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel
Depth to a restrictive feature (densic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 5 inches; coarse sandy loam
Bw1—5 to 11 inches; sandy loam
Bw2—11 to 17 inches; sandy loam

Bw3—17 to 21 inches; sandy loam
Bt1—21 to 31 inches; sandy loam
Bt2—31 to 51 inches; sandy loam
BCt—51 to 58 inches; gravelly sandy loam
Cdt—58 to 80 inches; bedrock

Characteristics of Rock Outcrop

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic hills
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 216

Haploxeralfs, fine, and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Lamellic Haploxerepts, coarse-loamy, more than 60 inches deep to densic bedrock, and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Coarse-loamy soils that are more than 60 inches deep to bedrock
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Coarse-loamy soils that are 20 to 40 inches deep to bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

217—Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 50 to 70 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Wildlife habitat, watershed, and recreation
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 1,200 to 2,000 feet (366 to 610 meters)
Mean annual precipitation: 40 to 55 inches (1,016 to 1,397 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Crystalhill gravelly coarse sandy loam—35 percent
Oregongulch gravelly sandy loam—20 percent

Craigsaddle coarse sandy loam—20 percent
Rock outcrop—10 percent
Minor components—15 percent

Characteristics of Crystalhill Gravelly Coarse Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic hills
Parent material: Coarse-loamy colluvium derived from trondhjemite
Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel
Depth to a restrictive feature (densic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 5.0 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 7 inches; gravelly coarse sandy loam
Bw1—7 to 14 inches; gravelly coarse sandy loam
Bw2—14 to 22 inches; gravelly coarse sandy loam
Bw3—22 to 33 inches; gravelly sandy loam
Bw4—33 to 44 inches; gravelly sandy loam
BC—44 to 66 inches; sandy loam
Cdt—66 inches; bedrock

Characteristics of Oregongulch Gravelly Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic hills
Parent material: Coarse-loamy colluvium derived from trondhjemite
Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 40 percent medium, angular gravel
Depth to a restrictive feature (densic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly sandy loam
Bw1—4 to 7 inches; gravelly sandy loam
Bw2—7 to 13 inches; gravelly sandy loam
Bw3—13 to 18 inches; gravelly sandy loam
C—18 to 24 inches; very gravelly sandy loam
Cdt—24 to 60 inches; bedrock

Characteristics of Craigsaddle Coarse Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic hills
Parent material: Fine-loamy colluvium derived from trondhjemite
Observed vegetation: Live oak, California black oak, whiteleaf manzanita, toyon, buckbrush, foothill pine, Pacific poison oak, deerbrush, Pacific madrone, scrub oak, and scattered ponderosa pine and incense cedar; Douglas-fir in draws
Texture of the surface layer: Coarse sandy loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel
Depth to a restrictive feature (densic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 5 inches; coarse sandy loam
Bw1—5 to 11 inches; sandy loam
Bw2—11 to 17 inches; sandy loam
Bw3—17 to 21 inches; sandy loam
Bt1—21 to 31 inches; sandy loam
Bt2—31 to 51 inches; sandy loam
BCt—51 to 58 inches; gravelly sandy loam
Cdt—58 to 80 inches; bedrock

Characteristics of Rock Outcrop

Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic hills
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 217

Haploxeralfs, fine, and similar soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Lamellic Haploxerepts, coarse-loamy, more than 60 inches deep to densic bedrock, and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Coarse-loamy soils that are less than 20 inches deep to densic bedrock
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Coarse-loamy soils that are 20 to 40 inches deep to bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Coarse-loamy soils that are more than 60 inches deep to bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

218—Rock outcrop-Lithic Xerorthents-Chawanakee complex, 12 to 50 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Wildlife habitat, watershed, and limited timber production
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,115 to 2,915 feet (646 to 890 meters)
Mean annual precipitation: 50 to 60 inches (1,270 to 1,524 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 200 to 240 days

Map Unit Composition

Rock outcrop (quartz diorite)—60 percent
Lithic Xerorthents gravelly sandy loam, mesic—20 percent

Chawanakee gravelly sandy loam—15 percent
Minor components—5 percent

Characteristics of Rock Outcrop (Quartz Diorite)

Slope: 12 to 50 percent
Geomorphic position: Ridgetops and side slopes on granitic mountains
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Characteristics of Lithic Xerorthents Gravelly Sandy Loam, Mesic

Slope: 12 to 50 percent
Geomorphic position: Ridgetops and side slopes on granitic mountains
Parent material: Coarse-loamy colluvium and residuum weathered from intrusive igneous rocks
Observed vegetation: Canyon live oak, whiteleaf manzanita, California black oak, and scattered conifers
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 50 percent coarse, subrounded gravel, 0 to 30 percent subrounded cobbles, 0 to 50 percent subrounded stones, 0 to 50 percent subrounded boulders
Depth to a restrictive feature (lithic bedrock): 5 to 10 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very low (about 0.6 inch)
- *Natural drainage class:* Somewhat excessively drained
- *Surface runoff (bare conditions):* Very high

Interpretive groups
- *Land capability, irrigated:* 8
- *Land capability, nonirrigated:* 8
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* D

Typical profile
- Oi—0 to 2 inches; slightly decomposed plant material
- A—2 to 4 inches; gravelly sandy loam
- Bw—4 to 8 inches; sandy loam
- R—8 inches; bedrock

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 12 to 50 percent
Geomorphic position: Ridgetops and side slopes on granitic mountains
Parent material: Coarse-loamy colluvium and residuum weathered from intrusive igneous rocks
Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, incense cedar, sugar pine, California black oak, Douglas-fir, deerbrush, and California buckthorn
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders
*Depth to a restrictive feature (paralithic bedrock):*10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 5 inches; gravelly sandy loam
Bw1—5 to 11 inches; gravelly sandy loam
Bw2—11 to 19 inches; gravelly sandy loam
Cr—19 inches; bedrock

Minor Components in Map Unit 218

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 5 percent
Slope: 12 to 50 percent
Geomorphic position: Ridgetops and side slopes on granitic mountains
Hydric soil status: Not hydric

219—Rock outcrop-Lithic Xerorthents-Chawanakee complex, 50 to 70 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Wildlife habitat, watershed, and limited timber production
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,555 to 4,395 feet (780 to 1,341 meters)
Mean annual precipitation: 50 to 80 inches (1,270 to 2,032 millimeters)
Mean annual air temperature: 50 to 57 degrees F (10 to 14 degrees C)
Frost-free period: 110 to 240 days

Map Unit Composition

Rock outcrop (quartz diorite)—60 percent
Lithic Xerorthents gravelly sandy loam, mesic—20 percent
Chawanakee gravelly sandy loam—15 percent
Minor components—5 percent

Characteristics of Rock Outcrop (Quartz Diorite)

Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Characteristics of Lithic Xerorthents Gravelly Sandy Loam, Mesic

Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy colluvium derived from intrusive igneous rocks
Observed vegetation: Canyon live oak, whiteleaf manzanita, California black oak, and scattered conifers
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 50 percent coarse, subrounded gravel, 0 to 30 percent subrounded cobbles, 0 to 50 percent subrounded stones, 0 to 50 percent subrounded boulders
Depth to a restrictive feature (lithic bedrock): 5 to 10 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.6 inch)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 4 inches; gravelly sandy loam
Bw—4 to 8 inches; sandy loam
R—8 inches; bedrock

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy colluvium derived from intrusive igneous rocks
Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, incense cedar, sugar pine, California black oak, Douglas-fir, deerbrush, and California buckthorn
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8

Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 5 inches; gravelly sandy loam
Bw1—5 to 11 inches; gravelly sandy loam
Bw2—11 to 19 inches; gravelly sandy loam
Cr—19 inches; bedrock

Minor Components in Map Unit 219

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

220—Esquon-Clear Lake complex, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Southwestern Butte County
Major uses: Wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 55 to 70 feet (18 to 22 meters)
Mean annual precipitation: 18 inches (457 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Esquon clay, frequently flooded—60 percent
Clear Lake silty clay loam, overwash—30 percent
Minor components—10 percent

Characteristics of Esquon Clay, Frequently Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Tules, swamp timothy, smartweed, sourdock, spike rush, bulrush, arnica ssp., bermudagrass, and cattails
Surface features: The surface has been leveled for agriculture. Surface polygonal cracking occurs during dry periods.
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural

depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Frequent
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 60 inches
Available water capacity: High (about 7.7 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 24 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 10 inches; clay
Bkss1—10 to 22 inches; clay
Bkss2—22 to 40 inches; clay
Bk—40 to 50 inches; clay loam
2Bkqm—50 inches; duripan

Characteristics of Clear Lake Silty Clay Loam, Overwash

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Flood-deposited, silty alluvium over silty and clayey alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Tules, swamp timothy, smartweed, sourdock, spike rush, bulrush, arnica ssp., bermudagrass, and cattails
Surface feature: The surface layer of silty clay loam is flood-deposited overwash.
Texture of the surface layer: Silty clay loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Frequent
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 80 inches
Available water capacity: High (about 9.6 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 31 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 0.5 inch; silty clay loam
Ab—0.5 inch to 7 inches; clay
Bgb1—7 to 19 inches; clay
Bgb2—19 to 29 inches; clay
Bkssb1—29 to 40 inches; clay
Bkssb2—40 to 55 inches; clay
Bkssb3—55 to 80 inches; clay

Minor Components in Map Unit 220

Clear Lake clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Esquon soils with a duripan at a depth of more than 60 inches and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that are continuously saturated
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood basins
Hydric soil status: Hydric

221yu—Sites loam, 3 to 8 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Timber production, livestock grazing, and homesite development
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,995 to 4,195 feet (609 to 1,280 meters)
Mean annual precipitation: 50 to 80 inches (1,270 to 2,032 millimeters)
Mean annual air temperature: 50 to 57 degrees F (10 to 14 degrees C)
Frost-free period: 130 to 190 days

Map Unit Composition

Sites loam—85 percent
Minor components—15 percent

Characteristics of Sites Loam

Slope: 3 to 8 percent
Geomorphic position: Metamorphic mountains
Parent material: Clayey residuum weathered from metamorphic rocks
Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 2e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 6 inches; loam
Bt1—6 to 16 inches; clay loam
Bt2 to Bt4—16 to 51 inches; clay
Bt5—51 to 61 inches; clay loam
Cr—61 inches; bedrock

Minor Components in Map Unit 221yu

Mariposa and similar soils
Composition: 5 percent
Slope: 3 to 8 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Sites gravelly loam and similar soils
Composition: 5 percent
Slope: 3 to 8 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Rogerville silt loam and similar soils
Composition: 3 percent
Slope: 3 to 8 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Soils that are wet
Composition: 2 percent
Slope: 3 to 8 percent
Geomorphic position: Mountains
Hydric soil status: Hydric

222yu—Sites loam, 8 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Timber production, livestock grazing, and homesite development
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,995 to 4,195 feet (609 to 1,280 meters)
Mean annual precipitation: 50 to 85 inches (1,270 to 2,159 millimeters)

Mean annual air temperature: 50 to 57 degrees F (10 to 14 degrees C)
Frost-free period: 130 to 190 days

Map Unit Composition

Sites loam—85 percent
Minor components—15 percent

Characteristics of Sites Loam

Slope: 8 to 15 percent
Geomorphic position: Metamorphic mountains
Parent material: Clayey residuum weathered from metamorphic rocks
Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* High (about 9.3 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 3e-1
- *Land capability, nonirrigated:* 3e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A—0 to 6 inches; loam
- Bt1—6 to 16 inches; clay loam
- Bt2 to Bt4—16 to 51 inches; clay
- Bt5—51 to 61 inches; clay loam
- Cr—61 inches; bedrock

Minor Components in Map Unit 222yu

Mariposa and similar soils
Composition: 5 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Sites gravelly loam, bedrock substratum, and similar soils
Composition: 3 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Soils that are wet
Composition: 3 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Hydric

Powellton and similar soils
Composition: 2 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Toadtown and similar soils
Composition: 2 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

225yu—Sites gravelly loam, bedrock substratum, 3 to 8 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Timber production, livestock grazing, and homesite development
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 4,195 feet (610 to 1,280 meters)
Mean annual precipitation: 50 to 80 inches (1,270 to 2,032 millimeters)
Mean annual air temperature: 50 to 57 degrees F (10 to 14 degrees C)
Frost-free period: 130 to 190 days

Map Unit Composition

Sites gravelly loam, bedrock substratum—80 percent
Minor components—20 percent

Characteristics of Sites Gravelly Loam, Bedrock Substratum

Slope: 3 to 8 percent
Geomorphic position: Metamorphic mountains
Parent material: Clayey residuum weathered from metamorphic rocks
Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very high (about 15.1 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 2e-1
- *Land capability, nonirrigated:* 3e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A—0 to 5 inches; gravelly loam

Bt1 to Bt5—5 to 53 inches; gravelly clay loam and gravelly clay
Cr—53 inches; bedrock

Minor Components in Map Unit 225yu

Mariposa and similar soils
Composition: 5 percent
Slope: 3 to 8 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 5 percent
Slope: 3 to 8 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Very deep Sites and similar soils
Composition: 5 percent
Slope: 3 to 8 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Toadtown and similar soils
Composition: 5 percent
Slope: 3 to 8 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

226yu—Sites gravelly loam, bedrock substratum, 8 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Timber production and homesite development
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 4,195 feet (610 to 1,280 meters)
Mean annual precipitation: 50 to 80 inches (1,270 to 2,032 millimeters)
Mean annual air temperature: 50 to 57 degrees F (10 to 14 degrees C)
Frost-free period: 130 to 190 days

Map Unit Composition

Sites gravelly loam, bedrock substratum—80 percent
Minor components—20 percent

Characteristics of Sites Gravelly Loam, Bedrock Substratum

Slope: 8 to 15 percent
Geomorphic position: Metamorphic mountains
Parent material: Clayey residuum weathered from metamorphic rocks
Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 15.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 5 inches; gravelly loam
Bt1 to Bt5—5 to 53 inches; gravelly clay and gravelly clay loam
Cr—53 inches; bedrock

Minor Components in Map Unit 226yu

Mariposa and similar soils
Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Woodleaf and similar soils
Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Very deep Sites and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Toadtown and similar soils
Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

227yu—Sites gravelly loam, bedrock substratum, 15 to 30 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Timber production and homesite development

Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 4,195 feet (610 to 1,280 meters)
Mean annual precipitation: 50 to 80 inches (1,270 to 2,032 millimeters)
Mean annual air temperature: 50 to 57 degrees F (10 to 14 degrees C)
Frost-free period: 130 to 190 days

Map Unit Composition

Sites gravelly loam, bedrock substratum—80 percent
Minor components—20 percent

Characteristics of Sites Gravelly Loam, Bedrock Substratum

Slope: 15 to 30 percent
Geomorphic position: Metamorphic mountains
Parent material: Clayey residuum weathered from metamorphic rocks
Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very high (about 15.1 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 4e-1
- *Land capability, nonirrigated:* 4e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A—0 to 5 inches; gravelly loam
- Bt1 to Bt5—5 to 53 inches; gravelly clay and gravelly clay loam
- Cr—53 inches; bedrock

Minor Components in Map Unit 227yu

Mariposa and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Woodleaf and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 4 percent
Slope: 15 to 30 percent

Geomorphic position: Mountains
Hydric soil status: Not hydric

Very deep Sites and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Toadtown and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

242yu—Surnuf gravelly loam, 8 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Timber production, livestock grazing, and homesite development
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,400 to 3,320 feet (427 to 1,012 meters)
Mean annual precipitation: 35 to 66 inches (889 to 1,676 millimeters)
Mean annual air temperature: 54 to 59 degrees F (12 to 15 degrees C)
Frost-free period: 170 to 240 days

Map Unit Composition

Surnuf loam—80 percent
Minor components—20 percent

Characteristics of Surnuf Loam

Slope: 8 to 15 percent
Geomorphic position: Metamorphic mountains
Parent material: Clayey colluvium and residuum weathered from gabbrodiorite
Observed vegetation: Ponderosa pine, incense cedar, California black oak, and brush
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (abrupt textural change): 12 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very low (about 2.0 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 3e-1
- *Land capability, nonirrigated:* 3e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
A and BAt—0 to 12 inches; loam
Bt1 to BCt—12 to 77 inches; clay loam and clay

Minor Components in Map Unit 242yu

Mildred and similar soils
Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Sites and similar soils
Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Mounthope and similar soils
Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Sommeyflat and similar soils
Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Clayey soils that are 40 to 60 inches deep to bedrock
Composition: 4 percent
Slope: 8 to 15 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

243yu—Surnuf gravelly loam, 15 to 30 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Timber production, livestock grazing, and homesite development
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,400 to 3,320 feet (427 to 1,012 meters)
Mean annual precipitation: 35 to 66 inches (889 to 1,676 millimeters)
Mean annual air temperature: 54 to 59 degrees F (12 to 15 degrees C)
Frost-free period: 170 to 240 days

Map Unit Composition

Surnuf loam—80 percent
Minor components—20 percent

Characteristics of Surnuf Loam

Slope: 15 to 30 percent
Geomorphic position: Metamorphic mountains
Parent material: Clayey colluvium and residuum weathered from gabbrodiorite

Observed vegetation: Ponderosa pine, incense cedar, California black oak, and brush
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (abrupt textural change): 12 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A and BAt—0 to 12 inches; loam
Bt1 to BCt—12 to 77 inches; clay and clay loam

Minor Components in Map Unit 243yu

Mildred and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Sites and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Mounthope and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Sommeyflat and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Clayey soils that are 40 to 60 inches deep to bedrock
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

244yu—Surnuf gravelly loam, 30 to 50 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Timber production and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,400 to 3,320 feet (427 to 1,012 meters)
Mean annual precipitation: 35 to 66 inches (889 to 1,676 millimeters)
Mean annual air temperature: 54 to 59 degrees F (12 to 15 degrees C)
Frost-free period: 170 to 240 days

Map Unit Composition

Surnuf loam—80 percent
Minor components—20 percent

Characteristics of Surnuf Loam

Slope: 30 to 50 percent
Geomorphic position: Metamorphic mountains
Parent material: Clayey colluvium and residuum weathered from gabbrodiorite
Observed vegetation: Ponderosa pine, incense cedar, California black oak, and brush
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (abrupt textural change): 12 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very low (about 2.0 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 6e-1
- *Land capability, nonirrigated:* 6e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- A and BAt—0 to 12 inches; loam
- Bt1 to BCt—12 to 77 inches; clay loam and clay

Minor Components in Map Unit 244yu

Mildred and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Sites and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Mounthope and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Sommeyflat and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

Clayey soils that are 40 to 60 inches deep to bedrock
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Mountains
Hydric soil status: Not hydric

245—Surnuf gravelly loam, 50 to 70 percent slopes

Map Unit Setting

General location: Southeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,245 to 2,795 feet (381 to 853 meters)
Mean annual precipitation: 60 to 65 inches (1,524 to 1,651 millimeters)
Mean annual air temperature: 55 degrees F (13 degrees C)
Frost-free period: 190 days

Map Unit Composition

Surnuf loam—80 percent
Minor components—20 percent

Characteristics of Surnuf Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes in canyons on metamorphic mountains
Parent material: Clayey colluvium derived from gabbrodiorite
Observed vegetation: Ponderosa pine, incense cedar, California black oak, Douglas-fir, whiteleaf manzanita, Pacific madrone, and Pacific poison oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (abrupt textural change): 12 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A and BAt—0 to 12 inches; loam
Bt1 to BCt—12 to 77 inches; clay and clay loam

Minor Components in Map Unit 245

Sites and similar soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes in canyons on metamorphic mountains
Hydric soil status: Not hydric

Griffgulch and similar soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes in canyons on metamorphic mountains
Hydric soil status: Not hydric

Mounthope and similar soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes in canyons on metamorphic mountains
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes in canyons on metamorphic mountains
Hydric soil status: Not hydric

248yu—Trainer loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 25 to 110 feet (9 to 35 meters)
Mean annual precipitation: 18 to 22 inches (457 to 559 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 290 days

Map Unit Composition

Trainer loam—85 percent
Minor components—15 percent

Characteristics of Trainer Loam

Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Parent material: Mixed fine-loamy alluvium

Observed vegetation: Rice, grasses, forbs, scattered valley oak, cottonwood, and shrubs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Occasional
Annual ponding frequency: None
Depth to a water table (zone of saturation): 36 to 60 inches
Available water capacity: Very high (about 10.2 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 2w-2
Land capability, nonirrigated: 3w-2
Storie index: 48.0 (historical number)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Ap—0 to 4 inches; loam
A—4 to 9 inches; loam
Bt1—9 to 16 inches; loam
Bt2—16 to 23 inches; loam
Bt3—23 to 36 inches; sandy loam
BCt—36 to 48 inches; sandy loam
C1—48 to 59 inches; sandy loam
C2—59 to 66 inches; coarse sandy loam

Minor Components in Map Unit 248yu

Columbia and similar soils
Composition: 4 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Kimball and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

San Joaquin and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Soils that have a water table within a depth of 20 inches
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Channels
Hydric soil status: Hydric

Wilsoncreek and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

250—Llanoseco silty clay loam, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

General location: Western Butte County
Major uses: Nonirrigated crops and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 105 feet (30 to 33 meters)
Mean annual precipitation: 18 to 19 inches (457 to 483 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Llanoseco silty clay loam, occasionally flooded—90 percent
Minor components—10 percent

Characteristics of Llanoseco Silty Clay Loam, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Wheat, annual grasses and forbs, and scattered valley oak
Surface feature: During periods of flooding, thin layers of silt are deposited on the surface.
Texture of the surface layer: Silty clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 60 to 120 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Dams and levees along the Sacramento River and its tributaries, drainage ditches, and leveling for agriculture have altered the hydrology, modifying the frequency and duration of saturation, ponding, and flooding.
- *Annual flooding frequency:* Occasional
- *Annual ponding frequency:* Rare
- *Depth to a water table (zone of saturation):* 40 to 91 inches
- *Available water capacity:* Very high (about 10.2 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 2w-2
- *Land capability, nonirrigated:* 3w-2
- *Storie index:* 63 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* D

Typical profile
Ap—0 to 8 inches; silty clay loam
2A—8 to 18 inches; silty clay loam
3Bss1—18 to 28 inches; silty clay
3Bss2—28 to 41 inches; silty clay
3Bss3—41 to 57 inches; silty clay
3Bss4—57 to 71 inches; silty clay
3Bk1—71 to 83 inches; silty clay
3Bk2—83 to 89 inches; silty clay
4Bkqm—89 to 93 inches; duripan

Minor Components in Map Unit 250

Whitecabin and similar soils
Composition: 7 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils in channels
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood basins
Hydric soil status: Hydric

Farwell silty clay and similar soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Margins of flood plains and flood basins
Hydric soil status: Not hydric

252—Whitecabin-Ordferry silty clays, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: West-central Butte County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 100 feet (29 to 32 meters)
Mean annual precipitation: 18 to 19 inches (457 to 482 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Whitecabin silty clay, occasionally flooded—60 percent
Ordferry silty clay, occasionally flooded—25 percent
Minor components—15 percent

Characteristics of Whitecabin Silty Clay, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice, pasture species, meadow barley, wildrye, curly dock, spikerush, dallisgrass, bermudagrass, cocklebur, Italian ryegrass, Fitch spikeweed, hayfield tarweed, filaree, soft chess, and prickly lettuce
Surface features: The surface has been leveled for agriculture. Slow-moving floodwaters carry sediment that is deposited in very small increments during each period of flooding. The surface layer may be silt loam or silty clay loam. Polygonal cracks open during dry periods.
Texture of the surface layer: Silty clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Occasional
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 53 inches
Available water capacity: High (about 8.5 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3w-2
Land capability, nonirrigated: 3w-2
Storie index: 26 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
Ap—0 to 5 inches; silty clay
Bss1—5 to 13 inches; silty clay
Bss2—13 to 26 inches; silty clay
Bss3—26 to 35 inches; silty clay
Bkss—35 to 45 inches; silty clay
Bk—45 to 53 inches; silty clay
2Bkqm1—53 to 63 inches; duripan
2Bkqm2—63 to 72 inches; duripan

Characteristics of Ordferry Silty Clay, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice, pasture species, meadow barley, medusahead, ripgut brome, wildrye, curly dock, spikerush, cocklebur, Italian ryegrass, Fitch spikeweed, hayfield tarweed, and prickly lettuce
Surface features: The surface has been leveled for agriculture. Slow-moving floodwaters carry sediment that is deposited in very small increments during each period of flooding. The surface layer may be silt loam or silty clay loam. Polygonal cracks open during dry periods.
Texture of the surface layer: Silty clay
Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Occasional
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Low (about 4.3 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 10 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 3 inches; silty clay
A2—3 to 6 inches; silty clay
Bss1—6 to 13 inches; silty clay
Bss2—13 to 25 inches; silty clay
Bk—25 to 29 inches; silty clay
2Bkqm1—29 to 33 inches; duripan
2Bkqm2—33 to 40 inches; duripan

Minor Components in Map Unit 252

Clear Lake clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Oroville taxadjunct, leveled, and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Soils that are frequently flooded
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood basins
Hydric soil status: Hydric

Soils that are frequently ponded for long periods
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on flood basins
Hydric soil status: Hydric

252yu—Woodleaf gravelly loam, 3 to 15 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Limited timber production and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 3,195 feet (610 to 975 meters)
Mean annual precipitation: 50 to 72 inches (1,270 to 1,829 millimeters)
Mean annual air temperature: 50 to 57 degrees F (10 to 14 degrees C)
Frost-free period: 140 to 190 days

Map Unit Composition

Woodleaf gravelly loam—80 percent
Minor components—20 percent

Characteristics of Woodleaf Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ultramafic mountains
Parent material: Clayey residuum weathered from ultramafic rocks
Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 6.6 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 7e-1
- *Land capability, nonirrigated:* 7e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A1 and A2—0 to 9 inches; gravelly loam
- 2Bt1 and 2Bt2—9 to 28 inches; very gravelly clay loam and very gravelly clay
- R—28 inches; bedrock

Minor Components in Map Unit 252yu

Sites and similar soils
Composition: 4 percent
Slope: 3 to 15 percent
Geomorphic position: Metamorphic mountains
Hydric soil status: Not hydric

Mariposa and similar soils
Composition: 4 percent
Slope: 3 to 15 percent

Geomorphic position: Metamorphic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 4 percent
Slope: 3 to 15 percent
Geomorphic position: Ultramafic mountains
Hydric soil status: Not hydric

Earlal and similar soils
Composition: 4 percent
Slope: 3 to 15 percent
Geomorphic position: Ultramafic mountains
Hydric soil status: Not hydric

Rogerville silt loam and similar soils
Composition: 4 percent
Slope: 3 to 15 percent
Geomorphic position: Ultramafic mountains
Hydric soil status: Not hydric

253yu—Woodleaf gravelly loam, 15 to 30 percent slopes

Map Unit Setting

General location: Yuba County and southeastern Butte County
Major uses: Limited timber production and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 3,195 feet (610 to 975 meters)
Mean annual precipitation: 50 to 72 inches (1,270 to 1,829 millimeters)
Mean annual air temperature: 50 to 57 degrees F (10 to 14 degrees C)
Frost-free period: 140 to 190 days

Map Unit Composition

Woodleaf gravelly loam—80 percent
Minor components—20 percent

Characteristics of Woodleaf Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ultramafic mountains
Parent material: Clayey residuum weathered from ultramafic rocks
Observed vegetation: Mixed conifers, hardwoods, brush, grasses, and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 6.6 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A1 and A2—0 to 9 inches; gravelly loam
2Bt1 and 2Bt2—9 to 28 inches; very gravelly clay loam and very gravelly clay
R—28 inches; bedrock

Minor Components in Map Unit 253yu

Sites and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Metamorphic mountains
Hydric soil status: Not hydric

Mariposa and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Metamorphic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Ultramafic mountains
Hydric soil status: Not hydric

Earlal and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Ultramafic mountains
Hydric soil status: Not hydric

Cerpone and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Ultramafic mountains
Hydric soil status: Not hydric

255—Whitecabin-Ordferry complex, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: West-central Butte County
Major uses: Cropland, pasture, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 105 feet (29 to 33 meters)
Mean annual precipitation: 18 to 19 inches (457 to 482 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Whitecabin silty clay loam, occasionally flooded—60 percent
Ordferry silty clay, occasionally flooded—30 percent
Minor components—10 percent

Characteristics of Whitecabin Silty Clay Loam, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice, meadow barley, wildrye, curly dock, spikerush, dallisgrass, bermudagrass, cocklebur, Italian ryegrass, Fitch spikeweed, hayfield tarweed, filaree, soft chess, and prickly lettuce
Surface features: The surface has been leveled for agriculture. Slow-moving floodwaters carry sediment that is deposited in very small increments during each period of flooding. The surface layer may be silt loam or silty clay loam. Polygonal cracks open during dry periods.
Texture of the surface layer: Silty clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* Occasional
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 0 to 53 inches
- *Available water capacity:* Moderate (about 7.4 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 3w-2
- *Land capability, nonirrigated:* 3w-2
- *Storie index:* 44 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* D

Typical profile
- Ap—0 to 8 inches; silty clay loam
- Bssb1—8 to 20 inches; clay
- Bssb2—20 to 44 inches; clay
- 2Bkqmb—44 to 60 inches; duripan

Characteristics of Ordferry Silty Clay, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Rice, meadow barley, medusahead, ripgut brome, wildrye, curly dock, spikerush, cocklebur, Italian ryegrass, Fitch spikeweed, hayfield tarweed, and prickly lettuce
Surface features: The surface has been leveled for agriculture. Slow-moving floodwaters carry sediment that is deposited in very small increments during each period of flooding. The surface layer may be silt loam or silty clay loam. Polygonal cracks open during dry periods.
Texture of the surface layer: Silty clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Occasional
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Low (about 4.3 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 10 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 3 inches; silty clay
A2—3 to 6 inches; silty clay
Bss1—6 to 13 inches; silty clay
Bss2—13 to 25 inches; silty clay
Bk—25 to 29 inches; silty clay
2Bkqm1—29 to 33 inches; duripan
2Bkqm2—33 to 40 inches; duripan

Minor Components in Map Unit 255

Soils that are frequently flooded
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood basins
Hydric soil status: Hydric

Clear Lake clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

256—Whitecabin silt loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: West-central Butte County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 100 feet (29 to 30 meters)
Mean annual precipitation: 18 to 19 inches (457 to 482 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Whitecabin silt loam, occasionally flooded—85 percent
Minor components—15 percent

Characteristics of Whitecabin Silt Loam, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice, meadow barley, wildrye, curly dock, spikerush, dallisgrass, bermudagrass, cocklebur, Italian ryegrass, Fitch spikeweed, hayfield tarweed, filaree, soft chess, and prickly lettuce
Surface features: The surface has been leveled for agriculture. Slow-moving floodwaters carry sediment that is deposited in very small increments during each period of flooding. The surface layer may be silt loam or silty clay loam. Polygonal cracks open during dry periods.
Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* Occasional
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 0 to 53 inches
- *Available water capacity:* High (about 8.6 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 3w-2
- *Land capability, nonirrigated:* 3w-2
- *Storie index:* 49 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* D

Typical profile
Ap—0 to 6 inches; silt loam
Bss1—6 to 13 inches; clay
Bss2—13 to 27 inches; clay
Bkss—27 to 42 inches; clay
2Bk—42 to 54 inches; clay loam
2Bkqm—54 to 62 inches; duripan

Minor Components in Map Unit 256

Soils that are frequently flooded
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood basins
Hydric soil status: Hydric

Clear Lake clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Ordferry clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

257—Llanoseco silty clay loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Western Butte County
Major uses: Nonirrigated crops and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 95 feet (27 to 30 meters)
Mean annual precipitation: 18 to 19 inches (457 to 483 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Llanoseco silty clay loam, frequently flooded—90 percent
Minor components—10 percent

Characteristics of Llanoseco Silty Clay Loam, Frequently Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Wheat, annual grasses and forbs, and scattered valley oak
Surface feature: During periods of flooding, thin layers of silt are deposited on the surface.
Texture of the surface layer: Silty clay loam
Percentage of the surface covered by rock fragments: None

Depth to a restrictive feature (duripan): 60 to 120 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Hydrology has been altered by levee construction along the Sacramento River. Historically, flooding occurred more frequently and at a lower velocity.
- *Annual flooding frequency:* Frequent
- *Annual ponding frequency:* Rare
- *Depth to a water table (zone of saturation):* 40 to 91 inches
- *Available water capacity:* Very high (about 10.2 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 4w-2
- *Land capability, nonirrigated:* 4w-2
- *Storie index:* 53 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* D

Typical profile
- Ap—0 to 8 inches; silty clay loam
- 2A—8 to 18 inches; silty clay loam
- 3Bss1—18 to 28 inches; silty clay
- 3Bss2—28 to 41 inches; silty clay
- 3Bss3—41 to 57 inches; silty clay
- 3Bss4—57 to 71 inches; silty clay
- 3Bk1—71 to 83 inches; silty clay
- 3Bk2—83 to 89 inches; silty clay
- 4Bkqm—89 to 93 inches; duripan

Minor Components in Map Unit 257

Whitecabin and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils in channels
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on flood basins
Hydric soil status: Hydric

Soils that are deep
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Not hydric

Farwell silty clay and similar soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Margins of flood plains and flood basins
Hydric soil status: Not hydric

258—Codora silty clay loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Southwestern Butte County and southeastern Glenn County
Major uses: Nonirrigated and irrigated crops and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 90 to 95 feet (27 to 29 meters)
Mean annual precipitation: 18 to 19 inches (457 to 483 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Codora silty clay loam, occasionally flooded—85 percent
Minor components—15 percent

Characteristics of Codora Silty Clay Loam, Occasionally Flooded

Slope: 0 to 2 percent
Geomorphic position: Flood plains
Parent material: Silty and clayey alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Annual grasses and forbs
Surface feature: Most areas have been leveled for agriculture.
Texture of the surface layer: Silty clay loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Dams and levees along the Sacramento River and its tributaries, drainage ditches, and leveling for agriculture have altered the hydrology, modifying the frequency and duration of saturation, ponding, and flooding.
- *Annual flooding frequency:* Occasional
- *Annual ponding frequency:* Occasional
- *Depth to a water table (zone of saturation):* 38 to 80 inches
- *Available water capacity:* Very high (about 11.0 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* Very low

Interpretive groups
- *Land capability, irrigated:* 3w-2
- *Land capability, nonirrigated:* 2w-2
- *Storie index:* 62 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- Ap—0 to 6 inches; silty clay loam
- A—6 to 11 inches; silty clay loam
- Bw1—11 to 22 inches; silty clay loam
- Bw2—22 to 38 inches; silty clay loam
- Bw3—38 to 60 inches; silty clay loam

Minor Components in Map Unit 258

Marvin and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Llanoseco and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

Columbia taxadjunct and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

260—Ordferry silty clay, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: West-central Butte County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 105 feet (30 to 33 meters)
Mean annual precipitation: 18 to 19 inches (457 to 482 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Ordferry silty clay, occasionally flooded—90 percent
Minor components—10 percent

Characteristics of Ordferry Silty Clay, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice, pasture species, meadow barley, medusahead, ripgut brome, wildrye, curly dock, spikerush, cocklebur, Italian ryegrass, Fitch spikeweed, hayfield tarweed, and prickly lettuce
Surface features: The surface has been leveled for agriculture. Slow-moving floodwaters carry sediment that is deposited in very small increments during each period of flooding. The surface layer may be silt loam or silty clay loam. Polygonal cracks open during dry periods.
Texture of the surface layer: Silty clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Occasional
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Low (about 4.3 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 10 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 3 inches; silty clay
A2—3 to 6 inches; silty clay
Bss1—6 to 13 inches; silty clay
Bss2—13 to 25 inches; silty clay
Bk—25 to 29 inches; silty clay
2Bkqm1—29 to 33 inches; duripan
2Bkqm2—33 to 40 inches; duripan

Minor Components in Map Unit 260

Whitecabin and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Esquon and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Esquon, overwash, and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Neerdobe and similar soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that are 10 to 20 inches deep to a duripan
Composition: 1 percent
Slope: 0 to 1 percent

Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that are frequently ponded for long periods
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on flood basins
Hydric soil status: Hydric

280—Columbia taxadjunct very fine sandy loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Western Butte County
Major uses: Wildlife habitat, watershed, and recreation
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 150 feet (27 to 46 meters)
Mean annual precipitation: 18 to 22 inches (457 to 559 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Columbia taxadjunct stratified very fine sandy loam—80 percent
Minor components—20 percent

Characteristics of Columbia Taxadjunct Stratified Very Fine Sandy Loam

Slope: 0 to 1 percent
Geomorphic position: Channels and oxbows on flood plains
Parent material: Sandy alluvium over silty alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Riparian vegetation, such as willows, California sycamore, blackberry, wild grape, sedges, and grasses
Surface feature: Floodwaters deposit fresh sediment annually.
Texture of the surface layer: Stratified fine sandy loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* Frequent
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 0 to 24 inches
- *Available water capacity:* High (about 9.1 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* Very high

Interpretive groups
- *Land capability, irrigated:* 5w-2

Land capability, nonirrigated: 5w-2
Storie index: 49 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
C1—0 to 8 inches; stratified fine sandy loam
C2—8 to 10 inches; fine sandy loam
C3—10 to 19 inches; stratified fine sandy loam
C4—19 to 30 inches; stratified fine sandy loam
C5—30 to 40 inches; stratified silt loam
C6—40 to 60 inches; stratified silt loam

Minor Components in Map Unit 280

Columbia sand and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Channels and oxbows on flood plains
Hydric soil status: Hydric

Parrott silt loam and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Bars on flood plains
Hydric soil status: Not hydric

Riverwash
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Gravel bars in channels
Hydric soil status: Hydric

Oxbow lakes
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Oxbows on flood plains
Hydric soil status: Hydric

290—Perkins gravelly loam, 0 to 2 percent slopes

Map Unit Setting

General location: Southeastern Butte County
Major uses: Pasture, homesite development, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 120 to 225 feet (38 to 70 meters)
Mean annual precipitation: 25 inches (635 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Perkins gravelly loam—90 percent
Minor components—10 percent

Characteristics of Perkins Gravelly Loam

Slope: 0 to 2 percent
Geomorphic position: Low terraces
Parent material: Fine-loamy alluvium over sandy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs and scattered blue oak
Surface feature: Some areas have been leveled for agriculture.
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent fine, subrounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 60 to 80 inches
Available water capacity: Moderate (about 5.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 2s-4
Land capability, nonirrigated: 3s-4
Storie index: 53 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Ap—0 to 8 inches; gravelly loam
Bt1—8 to 24 inches; gravelly loam
Bt2—24 to 38 inches; very gravelly sandy clay loam
BC—38 to 48 inches; very gravelly sandy loam
C—48 to 73 inches; very gravelly sandy loam

Minor Components in Map Unit 290

Kimball loam and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Eastbiggs loam and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Soils that are frequently flooded
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on low terraces
Hydric soil status: Hydric

300—Redsluff gravelly loam, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Homesite development, irrigated crops, livestock grazing, woodland, wildlife habitat, and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 175 to 400 feet (54 to 122 meters)
Mean annual precipitation: 24 to 29 inches (610 to 737 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Redsluff gravelly loam—80 percent
Minor components—20 percent

Characteristics of Redsluff Gravelly Loam

Slope: 0 to 2 percent
Geomorphic position: Low fan terraces
Parent material: Fine-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks over gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs, valley oak, blue oak, interior live oak, foothill pine, and almond orchards
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 15 percent medium, rounded gravel, 0 to 5 percent rounded cobbles
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Depth to a water table (zone of saturation): 35 to 80 inches
Available water capacity: Moderate (about 5.5 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 2s-11
Land capability, nonirrigated: 3s-11
Storie index: 52 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Ap—0 to 2 inches; gravelly loam
Bt1—2 to 5 inches; gravelly loam
Bt2—5 to 12 inches; gravelly clay loam
Bt3—12 to 21 inches; gravelly loam
Bt4—21 to 29 inches; gravelly loam
Bt5—29 to 37 inches; gravelly loam
Bt6—37 to 42 inches; extremely gravelly sandy loam
Cq—42 to 80 inches; extremely gravelly loamy sand

Minor Components in Map Unit 300

Fernandez sandy loam and similar soils
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Intermediate fan terraces
Hydric soil status: Not hydric

Soils that are more than 40 inches deep to weakly cemented material
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Low fan terraces
Hydric soil status: Not hydric

Typic Haploxeralfs, very deep, and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Intermediate fan terraces
Hydric soil status: Not hydric

Anita soils with a gravelly duripan and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Swales on low fan terraces
Hydric soil status: Hydric

Pachic Argixerolls and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low fan terraces
Hydric soil status: Not hydric

Redtough and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: High fan terraces
Hydric soil status: Not hydric

Munjar and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Intermediate fan terraces
Hydric soil status: Not hydric

301—Wafap-Hamslough complex, 0 to 2 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 150 to 440 feet (47 to 135 meters)
Mean annual precipitation: 25 to 28 inches (635 to 711 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Wafap gravelly loam—70 percent
Hamslough clay—15 percent
Minor components—15 percent

Characteristics of Wafap Gravelly Loam

Slope: 0 to 2 percent
Geomorphic position: Bars on low stream terraces
Parent material: Gravelly and clayey alluvium over cobbly alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 5 percent fine, rounded gravel, 0 to 5 percent rounded cobbles, 0 to 2 percent rounded stones
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Depth to a water table (zone of saturation): 13 to 60 inches
Available water capacity: Low (about 2.7 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 24 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 1 inch; gravelly loam
Bt1—1 to 5 inches; cobbly clay loam
Bt2—5 to 13 inches; very cobbly clay loam
Bt3—13 to 32 inches; extremely cobbly clay loam
Bt4—32 to 39 inches; extremely cobbly clay loam
Btq—39 to 46 inches; extremely gravelly sandy clay loam
2Bqm—46 inches; cemented, cobbly and gravelly duripan

Characteristics of Hamslough Clay

Slope: 0 to 2 percent
Geomorphic position: Channels on low stream terraces
Parent material: Clayey alluvium over clayey and gravelly alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: 0 to 20 percent medium, rounded gravel, 0 to 25 percent rounded cobbles
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Occasional
Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 80 inches
Available water capacity: Very low (about 2.3 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 5 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 3 inches; clay
A2—3 to 14 inches; cobbly clay
Bw—14 to 19 inches; extremely gravelly clay
Bg—19 to 27 inches; extremely gravelly sandy clay
2Bqm—27 inches; cemented, cobbly and gravelly duripan

Minor Components in Map Unit 301

Loamy-skeletal soils that are 40 to 60 inches deep to a duripan
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on low stream terraces
Hydric soil status: Not hydric

Fine textured soils that are 40 to 60 inches deep to a duripan
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on low stream terraces
Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on low stream terraces
Hydric soil status: Not hydric

Tuscan taxadjunct and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on low stream terraces
Hydric soil status: Not hydric

Anita soils with a gravelly duripan and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Clayey swales on stream terraces
Hydric soil status: Hydric

Oxyaquic Argixerolls, very stony, and similar soils
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Areas along the upper reaches of streams in canyons on stream terraces
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools in channels on low stream terraces
Hydric soil status: Hydric

Soils that are frequently flooded
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

302—Redtough-Redswale complex, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 200 to 400 feet (61 to 122 meters)
Mean annual precipitation: 23 to 28 inches (584 to 711 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Redtough loam—50 percent
Redswale cobbly loam—35 percent
Minor components—15 percent

Characteristics of Redtough Loam

Slope: 0 to 3 percent
Geomorphic position: Mounds on high fan terraces
Parent material: Loamy alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, well rounded gravel, 0 to 10 percent well rounded cobbles
Depth to a restrictive feature (duripan): 10 to 20 inches (fig. 25)
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 2 to 20 inches
Available water capacity: Very low (about 1.6 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Storie index: 11 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: D

Figure 25.—Exposure of a duripan, a pedogenic, silica-cemented layer, which underlies the Redtough and Redswale soils. These soils occur on terraces in areas of the Red Bluff Formation.

Typical profile

A—0 to 1 inch; loam
Bt1—1 to 7 inches; gravelly loam
Bt2—7 to 13 inches; very cobbly loam
Bqm—13 inches; cemented, very gravelly duripan

Characteristics of Redswale Cobbly Loam

Slope: 0 to 3 percent
Geomorphic position: Swales on high fan terraces
Parent material: Cobbly and loamy alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Cobbly loam
Percentage of the surface covered by rock fragments: 5 to 25 percent coarse, well rounded gravel, 0 to 40 percent well rounded cobbles, 0 to 5 percent well rounded stones
Depth to a restrictive feature (duripan): 4 to 10 inches (fig. 25)
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 10 inches
Available water capacity: Very low (about 0.7 inch)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Storie index: 4 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; cobbly loam
Bt—1 to 7 inches; very cobbly loam
Bqm—7 inches; cemented, very gravelly duripan

Minor Components in Map Unit 302

Soils that are frequently ponded for long periods
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on high fan terraces
Hydric soil status: Hydric

Redswale soils that are frequently flooded for long periods and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Large swales on high fan terraces
Hydric soil status: Hydric

Anita soils with a gravelly duripan and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Clayey swales on high fan terraces
Hydric soil status: Hydric

Tuscan and similar soils
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Mounds on high fan terraces
Hydric soil status: Not hydric

Abruptic Durixeralfs and similar soils
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Mounds on high fan terraces
Hydric soil status: Not hydric

Munjar and similar soils
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Mounds on high fan terraces
Hydric soil status: Not hydric

Soils on riser slopes
Composition: 1 percent
Slope: 10 to 35 percent
Geomorphic position: Risers on the edge of high fan terraces
Hydric soil status: Not hydric

303—Munjar-Tuscan taxadjunct-Galt complex, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Livestock grazing, wildlife habitat, watershed, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 180 to 395 feet (56 to 121 meters)
Mean annual precipitation: 23 to 26 inches (584 to 660 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Munjar gravelly loam—60 percent
Tuscan taxadjunct gravelly clay loam—20 percent
Galt clay—10 percent
Minor components—10 percent

Characteristics of Munjar Gravelly Loam

Slope: 0 to 2 percent
Geomorphic position: Bars and mounds on intermediate fan terraces
Parent material: Loamy, cobbly and gravelly alluvium over cemented, gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 5 to 30 percent coarse, well rounded gravel
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (minimum depth to zone of saturation):* 12 to 40 inches
- *Saturated hydraulic conductivity (lowest Ksat):* Moderately slow (0.2 to less than 0.6 in/hr)
- *Available water capacity:* Low (about 3.0 inches)
- *Natural drainage class:* Moderately well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 6s-3
- *Land capability, nonirrigated:* 6s-3
- *Storie index:* 21 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A—0 to 2 inches; gravelly loam
- Bt1—2 to 5 inches; gravelly loam
- Bt2—5 to 9 inches; gravelly loam
- Bt3—9 to 16 inches; gravelly loam
- Bt4—16 to 22 inches; extremely gravelly clay loam

2Btq—22 to 31 inches; extremely cobbly sandy clay
2Btqm—31 to 46 inches; extremely gravelly duripan

Characteristics of Tuscan Taxadjunct Gravelly Clay Loam

Slope: 0 to 2 percent
Geomorphic position: Mounds on intermediate fan terraces
Parent material: Gravelly and clayey alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly clay loam
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, rounded gravel, 0 to 10 percent rounded cobbles
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (minimum depth to zone of saturation): 2 to 40 inches
Saturated hydraulic conductivity (lowest Ksat): Slow (0.06 to less than 0.2 in/hr)
Available water capacity: Low (about 3.7 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-8
Land capability, nonirrigated: 5w-8
Storie index: 15 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly clay loam
Bt1—2 to 5 inches; gravelly clay
Bt2—5 to 13 inches; gravelly clay
Bt3—13 to 23 inches; gravelly clay loam
Bt4—23 to 29 inches; very gravelly clay loam
2Bqm—29 inches; extremely cobbly duripan

Characteristics of Galt Clay

Slope: 0 to 2 percent
Geomorphic position: Swales on intermediate fan terraces
Parent material: Clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, rounded gravel
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: Frequent
Water table (minimum depth to zone of saturation): 0 to 40 inches

Saturated hydraulic conductivity (lowest Ksat): Slow (0.06 to less than 0.2 in/hr)
Available water capacity: Low (about 4.8 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 10 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 3 inches; clay
A2—3 to 13 inches; clay
Bss—13 to 29 inches; clay
Bkss—29 to 32 inches; clay
2Bkqm—32 to 39 inches; duripan

Minor Components in Map Unit 303

Anita clay and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Swales on fan terraces
Hydric soil status: Hydric

Tuscan gravelly loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Mounds on fan terraces
Hydric soil status: Not hydric

Redding loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Mounds on fan terraces
Hydric soil status: Not hydric

Soils in cobble-lined channels
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Channels on fan terraces
Hydric soil status: Hydric

Areas where volcanic sediment crops out
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on fan terraces
Hydric soil status: Hydric

304—Redtough loam, 8 to 35 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 200 to 295 feet (61 to 91 meters)
Mean annual precipitation: 23 to 28 inches (584 to 711 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 255 days

Map Unit Composition

Redtough loam—80 percent
Minor components—20 percent

Characteristics of Redtough Loam

Slope: 8 to 35 percent
Geomorphic position: Riser slopes on high fan terraces
Parent material: Loamy alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, well rounded gravel, 0 to 10 percent well rounded cobbles
Depth to a restrictive feature (duripan): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very low (about 1.6 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* Very high

Interpretive groups
- *Land capability, irrigated:* 7s-8
- *Land capability, nonirrigated:* 7s-8
- *Storie index:* 12 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* D

Typical profile
- A—0 to 1 inch; loam
- Bt1—1 to 7 inches; gravelly loam
- Bt2—7 to 13 inches; very cobbly loam
- Bqm—13 inches; cemented, very gravelly duripan

Minor Components in Map Unit 304

Soils that are 20 to 40 inches deep to a duripan
Composition: 10 percent
Slope: 8 to 35 percent
Geomorphic position: Riser slopes on high fan terraces
Hydric soil status: Not hydric

Redswale and similar soils
Composition: 8 percent
Slope: 8 to 35 percent
Geomorphic position: Riser slopes on high fan terraces
Hydric soil status: Not hydric

Areas where a duripan crops out
Composition: 2 percent
Slope: 8 to 35 percent
Geomorphic position: Riser slopes on high fan terraces
Hydric soil status: Not hydric

305—Redtough-Redswale-Anita, gravelly duripan, complex, 0 to 5 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, watershed, and wildlife habitat
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 140 to 265 feet (44 to 81 meters)
Mean annual precipitation: 26 to 28 inches (660 to 711 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Redtough gravelly loam—45 percent
Redswale loam—25 percent
Anita gravelly clay, gravelly duripan—20 percent
Minor components—10 percent

Characteristics of Redtough Gravelly Loam

Slope: 0 to 5 percent
Geomorphic position: Mounds on strath terraces
Parent material: Loamy alluvium derived from volcanic and sedimentary rocks over cemented, gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, well rounded gravel
Depth to a restrictive feature (duripan): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 2 to 20 inches
Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6e-8
Land capability, nonirrigated: 6e-8

Storie index: 39 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 5 inches; gravelly loam
Bt2—5 to 8 inches; gravelly loam
Bt3—8 to 15 inches; clay loam
2Bqm—15 inches; cemented, very gravelly duripan

Characteristics of Redswale Loam

Slope: 0 to 5 percent
Geomorphic position: Swales on strath terraces
Parent material: Loamy and gravelly alluvium derived from volcanic and sedimentary rocks over cemented, gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 5 to 25 percent coarse, well rounded gravel
Depth to a restrictive feature (duripan): 4 to 10 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 10 inches
Available water capacity: Very low (about 0.6 inch)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Storie index: 39 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; loam
Bt—1 to 5 inches; very gravelly loam
2Bqm—5 inches; cemented, very gravelly duripan

Characteristics of Anita Gravelly Clay, Gravelly Duripan

Slope: 0 to 2 percent
Geomorphic position: Large swales on strath terraces
Parent material: Clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly clay
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subrounded gravel, 0 to 60 percent subrounded cobbles
Depth to a restrictive feature (duripan): 10 to 20 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Drainage and irrigation ditches have modified the natural depth

to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.

Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 20 inches
Available water capacity: Very low (about 1.7 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7w-2
Land capability, nonirrigated: 7w-2
Storie index: 12 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 3 inches; gravelly clay
Bss1—3 to 8 inches; gravelly clay
Bss2—8 to 15 inches; gravelly clay
2Bkqm—15 inches; cemented, gravelly duripan

Minor Components in Map Unit 305

Tuscan and similar soils
Composition: 2 percent
Slope: 0 to 5 percent
Geomorphic position: Mounds on strath terraces
Hydric soil status: Not hydric

Fallager loam and similar soils
Composition: 2 percent
Slope: 0 to 5 percent
Geomorphic position: Swales on strath terraces
Hydric soil status: Not hydric

Areas where a duripan crops out
Composition: 2 percent
Slope: 0 to 5 percent
Geomorphic position: Strath terraces
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on strath terraces
Hydric soil status: Hydric

Areas of sandstone outcrops
Composition: 1 percent
Slope: 0 to 5 percent
Geomorphic position: Strath terraces
Hydric soil status: Not hydric

Soils that have slopes of more than 50 percent
Composition: 1 percent
Slope: 50 to 150 percent

Geomorphic position: Cliffs on strath terraces
Hydric soil status: Not hydric

306—Duric Xerarents complex, 0 to 1 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Cropland
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 130 to 170 feet (40 to 53 meters)
Mean annual precipitation: 26 inches (660 millimeters)
Mean annual air temperature: 63 degrees F (17 degrees C)
Frost-free period: 250 days

Map Unit Composition

Duric Xerarents, fill—50 percent
Duric Xerarents, cut—40 percent
Minor components—10 percent

Characteristics of Duric Xerarents, Fill

Slope: 0 to 1 percent
Geomorphic position: Leveled strath terraces
Parent material: Human-transported, loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Rice and annual grasses and forbs
Surface feature: The surface has been leveled for agriculture.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 14 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* None
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 0 to 40 inches
- *Available water capacity:* Moderate (about 5.9 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* Very high

Interpretive groups
- *Land capability, irrigated:* 7w-2
- *Land capability, nonirrigated:* 7w-2
- *Storie index:* 34 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* D

Typical profile
- Ap—0 to 8 inches; loam
- C1—8 to 14 inches; sandy clay loam
- C2—14 to 20 inches; sandy clay loam

Ab—20 to 36 inches; sandy loam
Btb—36 to 40 inches; clay
2Bqmb—40 inches; duripan

Characteristics of Duric Xerarents, Cut

Slope: 0 to 1 percent
Geomorphic position: Leveled strath terraces
Parent material: Human-altered, loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Rice and annual grasses and forbs
Surface feature: The surface has been leveled for agriculture.
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 4 to 22 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Very low (about 1.8 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7w-2
Land capability, nonirrigated: 7w-2
Storie index: 14 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
Ap—0 to 13 inches; sandy loam
B—13 to 15 inches; gravelly sandy loam
2Bqm—15 inches; duripan

Minor Components in Map Unit 306

Tuscan and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Leveled strath terraces
Hydric soil status: Hydric

Fallager loam and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Leveled strath terraces
Hydric soil status: Hydric

Anita and similar soils
Composition: 2 percent
Slope: 0 to 1 percent

Geomorphic position: Leveled strath terraces
Hydric soil status: Hydric

Redtough and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Leveled strath terraces
Hydric soil status: Hydric

307—Duric Xerarents, 0 to 1 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Cropland, some of which is used for orchard crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 125 to 170 feet (39 to 52 meters)
Mean annual precipitation: 24 to 26 inches (610 to 660 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 days

Map Unit Composition

Duric Xerarents clay loam, leveled—70 percent
Minor components—30 percent

Characteristics of Duric Xerarents Clay Loam, Leveled

Slope: 0 to 1 percent
Geomorphic position: Leveled strath terraces
Parent material: Human-transported, clayey alluvium over cemented alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs, rice, and almond orchards
Surface features: The surface has been leveled for agricultural production. Textures, depth to a restrictive layer, and horizonation vary greatly because of cuts and fills.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, well rounded gravel
Depth to a restrictive feature (duripan): 10 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* None
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 0 to 40 inches
- *Available water capacity:* Very low (about 1.9 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* Very high

Interpretive groups
- *Land capability, irrigated:* 7w-2
- *Land capability, nonirrigated:* 7w-2
- *Storie index:* 11 (revised)

Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
Ap—0 to 2 inches; clay loam
Bt—2 to 12 inches; clay
2Bqm—12 inches; duripan

Minor Components in Map Unit 307

Tuscan and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Leveled strath terraces
Hydric soil status: Hydric

Fallager loam and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Leveled strath terraces
Hydric soil status: Hydric

Anita soils with a gravelly duripan and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Leveled strath terraces
Hydric soil status: Hydric

Clearhayes and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Leveled strath terraces
Hydric soil status: Hydric

Redsluff taxadjunct and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Leveled strath terraces
Hydric soil status: Hydric

Soils in areas of cuts and fills
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Leveled strath terraces
Hydric soil status: Hydric

310—Kimball loam, 1 to 3 percent slopes

Map Unit Setting

General location: Southern Butte County
Major uses: Cropland, livestock grazing, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 120 feet (26 to 38 meters)
Mean annual precipitation: 21 to 24 inches (533 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Kimball loam—85 percent
Minor components—15 percent

Characteristics of Kimball Loam

Slope: 0 to 3 percent
Geomorphic position: Low terraces
Parent material: Fine-loamy alluvium over clayey alluvium over fine-loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs and valley oak
Surface feature: Most areas have been leveled for agriculture.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (abrupt textural change): 17 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 2.8 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Low

Interpretive groups
- *Land capability, irrigated:* 2s-3
- *Land capability, nonirrigated:* 3s-3
- *Storie index:* 58 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- Ap1—0 to 2 inches; loam
- Ap2—2 to 4 inches; loam
- Ap3—4 to 6 inches; loam
- A—6 to 10 inches; loam
- BAt—10 to 17 inches; loam
- 2Btss—17 to 34 inches; clay
- 2Bt—34 to 46 inches; sandy clay loam
- 2BC—46 to 64 inches; sandy clay loam

Minor Components in Map Unit 310

Eastbiggs loam and similar soils
Composition: 5 percent
Slope: 0 to 3 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Galt clay loam and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Small basins and drainageways on low terraces
Hydric soil status: Hydric

Soils that are more than 40 inches deep to a duripan
Composition: 5 percent

Slope: 0 to 3 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

317—Thompsonflat loam, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 160 to 495 feet (49 to 152 meters)
Mean annual precipitation: 22 to 30 inches (559 to 762 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Thompsonflat loam—75 percent
Minor components—25 percent

Characteristics of Thompsonflat Loam

Slope: 2 to 15 percent
Geomorphic position: High terraces
Parent material: Loamy alluvium over clayey alluvium over noncemented or very weakly cemented, sandy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, buckbrush, foothill pine, and scattered interior live oak; in some areas, only annual grasses and forbs
Surface feature: Many areas have been leveled for homesite development.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, well rounded gravel, 0 to 2 percent well rounded cobbles
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 40 to 81 inches
- *Available water capacity:* Moderate (about 5.7 inches)
- *Natural drainage class:* Moderately well drained
- *Surface runoff (bare conditions):* Low

Interpretive groups
- *Land capability, irrigated:* 3e-3
- *Land capability, nonirrigated:* 3e-3
- *Storie index:* 83 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A—0 to 2 inches; loam
- Bt1—2 to 5 inches; gravelly loam
- Bt2—5 to 12 inches; gravelly loam
- Bt3—12 to 19 inches; gravelly loam

Bt4—19 to 29 inches; gravelly clay loam
2Bt5—29 to 35 inches; very gravelly clay
3Bq1—35 to 43 inches; extremely gravelly sandy clay loam
3Bq2—43 to 80 inches; extremely gravelly sandy clay loam

Minor Components in Map Unit 317

Oroville and similar soils
Composition: 10 percent
Slope: 2 to 15 percent
Geomorphic position: High terraces
Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to a duripan
Composition: 5 percent
Slope: 2 to 5 percent
Geomorphic position: Mounds and swales on high terraces
Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to a duripan
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: High terraces
Hydric soil status: Not hydric

Rock outcrop (mudflow or tuff)
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Hills
Hydric soil status: Not hydric

Fine textured soils that are 40 to 60 inches deep to densic bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Risers on terraces
Hydric soil status: Not hydric

Vertisols with a duripan at a depth of 20 to 40 inches and similar soils
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Small basins on high terraces
Hydric soil status: Hydric

318—Thompsonflat-Oroville complex, 0 to 9 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, homesite development, and some orchard crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 120 to 255 feet (37 to 79 meters)
Mean annual precipitation: 22 to 30 inches (559 to 762 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Thompsonflat fine sandy loam—50 percent
Oroville gravelly fine sandy loam—40 percent
Minor components—10 percent

Characteristics of Thompsonflat Fine Sandy Loam

Slope: 0 to 9 percent
Geomorphic position: Intermediate terraces
Parent material: Loamy alluvium over clayey alluvium over sandy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs and some olive orchards
Surface feature: Some areas have been leveled for homesite development.
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, well rounded gravel, 0 to 2 percent well rounded cobbles
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 40 to 81 inches
Available water capacity: Low (about 4.1 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-3
Land capability, nonirrigated: 3e-3
Storie index: 83 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 3 inches; fine sandy loam
Bt1—3 to 7 inches; fine sandy loam
Bt2—7 to 11 inches; sandy clay loam
Bt3—11 to 15 inches; sandy clay
2Bt4—15 to 22 inches; gravelly sandy clay
3Btq1—22 to 35 inches; extremely gravelly sandy clay loam
3Btq2 to 3Btq5—35 to 80 inches; extremely gravelly coarse sandy loam

Characteristics of Oroville Gravelly Fine Sandy Loam

Slope: 0 to 9 percent
Geomorphic position: Swales on intermediate terraces
Parent material: Loamy and gravelly alluvium over clayey and gravelly alluvium over cemented, loamy and extremely gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs and some olive orchards
Texture of the surface layer: Gravelly fine sandy loam
Percentage of the surface covered by rock fragments: 5 to 20 percent coarse, well rounded gravel
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Low (about 2.7 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 4e-3
Land capability, nonirrigated: 4e-3
Storie index: 7 (revised)
Hydric soil status: Hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly fine sandy loam
BAt—2 to 6 inches; gravelly sandy loam
Bt1—6 to 13 inches; gravelly clay loam
2Bt2—13 to 17 inches; gravelly clay
2Btg—17 to 23 inches; gravelly sandy clay
3Bqm1 and 3Bqm2—23 to 60 inches; cemented, extremely gravelly duripan

Minor Components in Map Unit 318

Fernandez sandy loam and similar soils
Composition: 5 percent
Slope: 0 to 9 percent
Geomorphic position: Intermediate terraces
Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to a duripan
Composition: 3 percent
Slope: 0 to 5 percent
Geomorphic position: Swales on intermediate terraces
Hydric soil status: Hydric

Fine-loamy soils that are 40 to 60 inches deep to densic bedrock
Composition: 2 percent
Slope: 0 to 9 percent
Geomorphic position: Intermediate terraces
Hydric soil status: Not hydric

320—Vistarobles-Redding complex, 0 to 9 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County
Major uses: Livestock grazing, homesite development, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 225 feet (26 to 69 meters)
Mean annual precipitation: 20 to 28 inches (508 to 711 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 260 days

Map Unit Composition

Vistarobles sandy loam—50 percent
Redding loam—40 percent
Minor components—10 percent

Characteristics of Vistarobles Sandy Loam

Slope: 0 to 9 percent
Geomorphic position: Swales on intermediate terraces
Parent material: Loamy alluvium over clayey and gravelly alluvium over cemented, sandy and gravelly alluvium over sandy and cobbly and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, rounded gravel, 0 to 5 percent rounded cobbles
Depth to a restrictive feature (duripan): 10 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* None
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 0 to 20 inches
- *Available water capacity:* Very low (about 1.9 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* Very high

Interpretive groups
- *Land capability, irrigated:* 7e-8
- *Land capability, nonirrigated:* 7e-8
- *Storie index:* 10 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* D

Typical profile
- A1—0 to 5 inches; sandy loam
- A2—5 to 10 inches; sandy clay loam
- 2Bt—10 to 14 inches; gravelly clay
- 3Bqm—14 to 34 inches; cemented, gravelly duripan
- 3C—34 to 40 inches; very cobbly sandy loam

Characteristics of Redding Loam

Slope: 0 to 9 percent
Geomorphic position: Mounds on intermediate terraces
Parent material: Loamy alluvium over clayey alluvium over cemented, sandy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, rounded gravel

Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 24 to 40 inches
Available water capacity: Moderate (about 5.4 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-3
Land capability, nonirrigated: 3e-3
Storie index: 32 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A1—0 to 4 inches; loam
A2—4 to 11 inches; loam
BA—11 to 24 inches; loam
2Bt—24 to 35 inches; clay
3Bqm—35 to 40 inches; cemented, very gravelly duripan

Minor Components in Map Unit 320

Galt clay and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Small basins on intermediate terraces
Hydric soil status: Hydric

Thermalito sandy loam and similar soils
Composition: 2 percent
Slope: 0 to 9 percent
Geomorphic position: Mounds on intermediate terraces
Hydric soil status: Not hydric

Fernandez sandy loam and similar soils
Composition: 1 percent
Slope: 0 to 9 percent
Geomorphic position: Convex areas on intermediate terraces
Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to a duripan
Composition: 1 percent
Slope: 0 to 9 percent
Geomorphic position: Swales on intermediate terraces
Hydric soil status: Hydric

Clayey soils that are 10 to 20 inches deep to a duripan
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Small basins, swales, and vernal pools on intermediate terraces
Hydric soil status: Hydric

321—Durixeralfs-Typic Petraquepts complex, 0 to 2 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing and wildlife habitat
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 150 to 235 feet (46 to 72 meters)
Mean annual precipitation: 25 to 27 inches (635 to 686 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 250 days

Map Unit Composition

Durixeralfs, fine-loamy, gravelly fine sandy loam—50 percent
Durixeralfs, loamy-skeletal, gravelly fine sandy loam—20 percent
Typic Petraquepts silty clay—15 percent
Minor components—15 percent

Characteristics of Durixeralfs, Fine-Loamy, Gravelly Fine Sandy Loam

Slope: 0 to 2 percent
Geomorphic position: Mounds on strath terraces
Parent material: Loamy and gravelly alluvium over clayey and gravelly alluvium over cemented, very gravelly alluvium derived from basalt
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 20 percent medium, subrounded gravel
Depth to a restrictive feature: 20 to 40 inches to a duripan; 32 to 64 inches to paralithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 20 to 40 inches
- *Available water capacity:* Low (about 3.1 inches)
- *Natural drainage class:* Moderately well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 4s-8
- *Land capability, nonirrigated:* 4s-8
- *Storie index:* 35 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A—0 to 1 inch; gravelly fine sandy loam
- Bt1—1 to 5 inches; gravelly fine sandy loam
- Bt2—5 to 10 inches; gravelly loam
- Bt3—10 to 18 inches; gravelly loam
- Bt4—18 to 24 inches; very gravelly clay loam

2Bt5—24 to 27 inches; very gravelly sandy clay
3Bqm—27 inches; cemented, very gravelly duripan

Characteristics of Durixeralfs, Loamy-Skeletal, Gravelly Fine Sandy Loam

Slope: 0 to 2 percent
Geomorphic position: Swales on strath terraces
Parent material: Loamy and gravelly alluvium over cemented, very gravelly alluvium derived from basalt
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, well rounded gravel, 2 to 5 percent well rounded cobbles
Depth to a restrictive feature: 9 to 20 inches to a duripan; 21 to 44 inches to paralithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 20 inches
Available water capacity: Very low (about 1.0 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7w-8
Land capability, nonirrigated: 7w-8
Storie index: 13 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; gravelly fine sandy loam
Bt1—1 to 4 inches; gravelly loam
Bt2—4 to 9 inches; very cobbly clay loam
2Bqm—9 inches; cemented, very gravelly duripan

Characteristics of Typic Petraquepts Silty Clay

Slope: 0 to 1 percent
Geomorphic position: Swales on strath terraces
Parent material: Clayey and gravelly alluvium over cemented, very gravelly alluvium derived from basalt
Observed vegetation: Annual grasses and forbs
Surface feature: Polygonal cracks open during dry periods.
Texture of the surface layer: Silty clay
Percentage of the surface covered by rock fragments: 5 to 10 percent coarse, well rounded gravel, 0 to 5 percent well rounded cobbles
Depth to a restrictive feature: 10 to 20 inches to a duripan; 22 to 44 inches to paralithic bedrock
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent

Depth to a water table (zone of saturation): 0 to 20 inches
Available water capacity: Very low (about 1.3 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7w-3
Land capability, nonirrigated: 7w-3
Storie index: 12 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 3 inches; silty clay
Bss—3 to 11 inches; gravelly silty clay
2Bqm—11 inches; very gravelly duripan

Minor Components in Map Unit 321

Soils that are frequently ponded for long periods
Composition: 8 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on strath terraces
Hydric soil status: Hydric

Durixeralfs with 20 to 40 percent cobbles on the surface and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Swales on strath terraces
Hydric soil status: Hydric

Soils in cobble-lined channels
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Ephemeral channels on strath terraces
Hydric soil status: Hydric

Vertisols with a duripan at a depth of 20 to 40 inches and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Basins on strath terraces
Hydric soil status: Hydric

330—Wilsoncreek-Trainer loams, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

General location: South-central Butte County
Major uses: Cropland, pasture, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 75 to 215 feet (23 to 67 meters)
Mean annual precipitation: 20 to 24 inches (508 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 250 days

Map Unit Composition

Wilsoncreek loam, occasionally flooded—60 percent
Trainer loam, occasionally flooded—25 percent
Minor components—15 percent

Characteristics of Wilsoncreek Loam, Occasionally Flooded

Slope: 0 to 2 percent
Geomorphic position: Bars on flood plains
Parent material: Fine-silty alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs, valley oak, and rice
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* Occasional
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 36 to 60 inches
- *Available water capacity:* High (about 9.5 inches)
- *Natural drainage class:* Moderately well drained
- *Surface runoff (bare conditions):* Very low

Interpretive groups
- *Land capability, irrigated:* 2w-2
- *Land capability, nonirrigated:* 3w-2
- *Storie index:* 79 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Ap—0 to 7 inches; loam
- A1—7 to 14 inches; loam
- A2—14 to 25 inches; loam
- A3—25 to 34 inches; loam
- Bw1—34 to 44 inches; loam
- Bw2—44 to 60 inches; loam

Characteristics of Trainer Loam, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Stream terraces
Parent material: Fine-loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs, rice, and scattered willows
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* Occasional
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 36 to 60 inches
- *Available water capacity:* Very high (about 10.8 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* Low

Interpretive groups
Land capability, irrigated: 2w-2
Land capability, nonirrigated: 3w-2
Storie index: 69 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Ap—0 to 7 inches; loam
A—7 to 13 inches; loam
Bt1—13 to 26 inches; loam
Bt2—26 to 36 inches; loam
C1—36 to 46 inches; fine sandy loam
C2—46 to 61 inches; sandy loam

Minor Components in Map Unit 330

Galt clay loam, ponded, and similar soils
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Small basins on low terraces
Hydric soil status: Hydric

Eastbiggs loam and similar soils
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Columbia and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

Kimball and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Soils that are 10 to 20 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

331—Thompsonflat loam, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 255 to 495 feet (79 to 152 meters)
Mean annual precipitation: 22 to 30 inches (559 to 762 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Thompsonflat loam—85 percent
Minor components—15 percent

Characteristics of Thompsonflat Loam

Slope: 15 to 30 percent
Geomorphic position: High terraces
Parent material: Loamy alluvium over clayey alluvium over noncemented or very weakly cemented, sandy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, buckbrush, foothill pine, and scattered interior live oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, well rounded gravel, 0 to 2 percent well rounded cobbles
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 40 to 81 inches
- *Available water capacity:* Moderate (about 5.7 inches)
- *Natural drainage class:* Moderately well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 4e-3
- *Land capability, nonirrigated:* 4e-3
- *Storie index:* 69 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A—0 to 2 inches; loam
- Bt1—2 to 5 inches; gravelly loam
- Bt2—5 to 12 inches; gravelly loam
- Bt3—12 to 19 inches; gravelly loam
- Bt4—19 to 29 inches; gravelly clay loam
- 2Bt5—29 to 35 inches; very gravelly clay
- 3Bq1 and 3Bq2—35 to 80 inches; extremely gravelly sandy clay loam

Minor Components in Map Unit 331

Oroville and similar soils
Composition: 9 percent
Slope: 15 to 30 percent
Geomorphic position: High terraces
Hydric soil status: Not hydric

Escarpments
Composition: 3 percent
Slope: 30 to 150 percent

Geomorphic position: Risers on high terraces
Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to a duripan
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: High terraces
Hydric soil status: Not hydric

335—Galt clay loam, 0 to 1 percent slopes

Map Unit Setting

General location: Southern Butte County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 75 to 85 feet (24 to 27 meters)
Mean annual precipitation: 21 inches (533 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 245 days

Map Unit Composition

Galt clay loam—85 percent
Minor components—15 percent

Characteristics of Galt Clay Loam

Slope: 0 to 2 percent
Geomorphic position: Basins on low terraces
Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* None
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 0 to 40 inches
- *Available water capacity:* Moderate (about 5.2 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 5w-2
- *Land capability, nonirrigated:* 5w-2
- *Storie index:* 18 (revised)

Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 6 inches; clay loam
Bss1—6 to 20 inches; clay loam
Bss2—20 to 27 inches; clay
Bss3—27 to 30 inches; clay
2Bqm—30 inches; duripan

Minor Components in Map Unit 335

Eastbiggs loam and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Esquon clay and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Basins on low terraces
Hydric soil status: Hydric

Wilsoncreek loam and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

336—Galt clay, 0 to 1 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Nonirrigated crops, livestock grazing, orchard crops, and commercial development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 135 to 295 feet (42 to 91 meters)
Mean annual precipitation: 22 to 25 inches (559 to 635 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 days

Map Unit Composition

Galt clay—90 percent
Minor components—10 percent

Characteristics of Galt Clay

Slope: 0 to 1 percent
Geomorphic position: Basins on terraces
Parent material: Clayey alluvium over cemented, loamy alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs, wheat, alfalfa, and prune and almond orchards
Surface features: In a few areas the surface has been leveled for agriculture. Polygonal cracks open during dry periods.

Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Rare
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Low (about 4.8 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 10 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 3 inches; clay
A2—3 to 13 inches; clay
Bss—13 to 29 inches; clay
Bkss—29 to 32 inches; clay
2Bkqm—32 to 39 inches; duripan

Minor Components in Map Unit 336

Anita clay and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Basins on terraces
Hydric soil status: Hydric

Fine-loamy soils that are 20 to 40 inches deep to a duripan
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Bosquejo clay and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Interfan basins
Hydric soil status: Not hydric

Conejo clay loam and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

337—Galt clay loam, 0 to 1 percent slopes, leveled

Map Unit Setting

General location: Northwestern and southern Butte County
Major uses: Orchard crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 180 feet (27 to 56 meters)
Mean annual precipitation: 21 to 23 inches (533 to 584 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 250 days

Map Unit Composition

Galt clay loam—85 percent
Minor components—15 percent

Characteristics of Galt Clay Loam

Slope: 0 to 2 percent
Geomorphic position: Flood basins
Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous and metamorphic rocks
Observed vegetation: Almond and prune orchards and annual grasses and forbs
Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* None
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 0 to 40 inches
- *Available water capacity:* Moderate (about 5.2 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 5w-2
- *Land capability, nonirrigated:* 5w-2
- *Storie index:* 18 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* D

Typical profile
- A—0 to 6 inches; clay loam
- Bss1—6 to 20 inches; clay loam
- Bss2—20 to 27 inches; clay
- Bss3—27 to 30 inches; clay
- 2Bqm—30 inches; duripan

Minor Components in Map Unit 337

Esquon clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Eastbiggs loam and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Boga loam and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Loemstone loam and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

338—Oxyaquic Xerofluvents silt loam, 0 to 1 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Orchard crops and nonirrigated crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 120 to 200 feet (38 to 61 meters)
Mean annual precipitation: 21 to 26 inches (533 to 660 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 250 days

Map Unit Composition

Oxyaquic Xerofluvents silt loam—90 percent
Minor components—10 percent

Characteristics of Oxyaquic Xerofluvents Silt Loam

Slope: 0 to 1 percent
Geomorphic position: Stream terraces
Parent material: Silty and coarse-loamy alluvium that is generated from hydraulic mines and is derived from sedimentary rocks
Observed vegetation: Almond orchards and wheat
Surface features: The natural soil surface has been buried by hydraulic-mine sediment and leveled for agriculture.
Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (abrupt textural change): 40 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Hydrology has been altered by the deposition of hydraulic-mine sediment.
Annual flooding frequency: Rare
Annual ponding frequency: Rare
Depth to a water table (zone of saturation): 36 to 80 inches
Available water capacity: Moderate (about 7.0 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 3w-2
Land capability, nonirrigated: 3w-2
Storie index: 70 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Ap—0 to 6 inches; silt loam
C1—6 to 20 inches; silt loam
C2—20 to 32 inches; loamy sand
C3—32 to 36 inches; loamy fine sand
C4—36 to 46 inches; coarse sand
C5—46 to 50 inches; silt loam
C6—50 to 55 inches; loamy fine sand
C7—55 to 60 inches; silt loam

Minor Components in Map Unit 338

Soils that are less than 10 inches deep to a duripan
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Terraces
Hydric soil status: Not hydric

Alluvial soils on strath terraces
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Strath terraces
Hydric soil status: Not hydric

Soils that are less than 40 inches deep to buried basin clay
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Areas of hydraulic-mine sediment on stream terraces
Hydric soil status: Not hydric

339—Oxyaquic Xerofluvents sandy loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: West-central Butte County
Major uses: Wildlife habitat, borrow pits, and flood retention
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 95 to 150 feet (29 to 47 meters)

Mean annual precipitation: 21 to 26 inches (533 to 660 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 250 days

Map Unit Composition

Oxyaquic Xerofluvents sandy loam, frequently flooded—90 percent
Minor components—10 percent

Characteristics of Oxyaquic Xerofluvents Sandy Loam, Frequently Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood plains
Parent material: Silty and coarse-loamy alluvium that is generated from hydraulic mines and is derived from sedimentary rocks
Observed vegetation: Willows, alder, Oregon ash, California sycamore, valley oak, and annual grasses and forbs
Surface feature: Hydraulic-mine sediment has been deposited within the confines of artificial levees.
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (abrupt textural change): 40 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Hydrology has been altered by artificial drainage and by a canal constructed to protect farmland and to carry hydraulic-mine sediment from the Cherokee and Forks of Butte Gold Mines.
- *Annual flooding frequency:* Frequent
- *Annual ponding frequency:* Rare
- *Depth to a water table (zone of saturation):* 36 to 80 inches
- *Available water capacity:* Moderate (about 6.3 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* Very low

Interpretive groups
- *Land capability, irrigated:* 4w-2
- *Land capability, nonirrigated:* 4w-2
- *Storie index:* 56 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* B

Typical profile
- A—0 to 8 inches; sandy loam
- C1—8 to 12 inches; sandy loam
- C2—12 to 16 inches; fine sandy loam
- C3—16 to 60 inches; stratified sandy loam to gravelly sand

Minor Components in Map Unit 339

Soils that are less than 20 inches deep to buried basin clay
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Soils that are less than 40 inches deep to a duripan
Composition: 2 percent

Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Riverwash
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Gravel bars in channels
Hydric soil status: Hydric

Typic Xerofluvents and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Near Butte Creek, soils that are occasionally flooded
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

340—Rock outcrop-Thermalrocks-Campbellhills complex, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, recreation, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 150 to 1,580 feet (46 to 482 meters)
Mean annual precipitation: 25 to 35 inches (635 to 889 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Rock outcrop (Lovejoy basalt)—35 percent
Thermalrocks very gravelly loam—25 percent
Campbellhills gravelly loam—20 percent
Minor components—20 percent

Characteristics of Rock Outcrop (Lovejoy Basalt)

Slope: 2 to 15 percent
Geomorphic position: The top of basalt plateaus
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Characteristics of Thermalrocks Very Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: The top of basalt plateaus
Parent material: Gravelly residuum weathered from basalt
Observed vegetation: Annual grasses and forbs, mosses, and lichens
Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 2 to 50 percent angular cobbles
Depth to a restrictive feature (lithic bedrock): 5 to 10 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.4 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; very gravelly loam
Bt—1 to 5 inches; very gravelly loam
R—5 inches; bedrock

Characteristics of Campbellhills Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: Fractures on the top of basalt plateaus
Parent material: Gravelly residuum weathered from basalt
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 10 to 25 percent medium, subangular gravel, 0 to 30 percent subangular cobbles
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 3 to 60 inches
Available water capacity: Low (about 4.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6e-4
Land capability, nonirrigated: 6e-4
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 7 inches; gravelly loam
Bt2—7 to 17 inches; very gravelly clay loam
Bt3—17 to 29 inches; very gravelly clay loam
Bt4—29 to 39 inches; extremely gravelly clay loam
Bt5—39 to 50 inches; extremely gravelly clay loam
R—50 inches; bedrock

Minor Components in Map Unit 340

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 7 percent
Slope: 2 to 15 percent
Geomorphic position: The top of basalt plateaus
Hydric soil status: Not hydric

Beatsonhollow and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Swales on the top of basalt plateaus
Hydric soil status: Hydric

Escarpments
Composition: 3 percent
Slope: 70 to 200 percent
Geomorphic position: Escarpments on basalt plateaus
Hydric soil status: Not hydric

Cherotable and similar soils
Composition: 3 percent
Slope: 2 to 5 percent
Geomorphic position: Draws on the top of basalt plateaus
Hydric soil status: Not hydric

Soils that are in draws and have slopes of 15 to 50 percent
Composition: 2 percent
Slope: 15 to 50 percent
Geomorphic position: Draws
Hydric soil status: Not hydric

341—Elsey-Beatsonhollow-Campbellhills-Rock outcrop complex, 2 to 5 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, recreation, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 380 to 1,440 feet (116 to 439 meters)
Mean annual precipitation: 27 to 35 inches (686 to 889 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Elsey loam—25 percent
Beatsonhollow gravelly loam—25 percent
Campbellhills gravelly loam—20 percent
Rock outcrop (Lovejoy basalt)—20 percent
Minor components—10 percent

Characteristics of Elsey Loam

Slope: 2 to 5 percent
Geomorphic position: Mounds on the top of basalt plateaus

Parent material: Loamy residuum weathered from basalt
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 5 to 15 percent medium, subangular gravel, 0 to 5 percent subangular cobbles
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 15 to 40 inches
Available water capacity: Low (about 4.7 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6e-8
Land capability, nonirrigated: 6e-8
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 3 inches; loam
BAt—3 to 8 inches; gravelly loam
Bt1—8 to 17 inches; cobbly loam
Bt2—17 to 25 inches; cobbly loam
Bt3—25 to 32 inches; very cobbly loam
Bt4—32 to 38 inches; very cobbly loam
R—38 inches; bedrock

Characteristics of Beatsonhollow Gravelly Loam

Slope: 2 to 5 percent
Geomorphic position: Swales on the top of basalt plateaus
Parent material: Gravelly residuum weathered from basalt
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 10 to 20 percent medium, angular gravel, 10 to 15 percent angular cobbles
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 20 inches
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7w-2
Land capability, nonirrigated: 7w-2
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 3 inches; gravelly loam
A2—3 to 10 inches; cobbly loam
Bt—10 to 17 inches; very cobbly loam
R—17 inches; bedrock

Characteristics of Campbellhills Gravelly Loam

Slope: 2 to 5 percent
Geomorphic position: Fractures on the top of basalt plateaus
Parent material: Gravelly residuum weathered from basalt
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 10 to 25 percent medium, subangular gravel, 0 to 30 percent subangular cobbles
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 3 to 60 inches
Available water capacity: Low (about 4.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6e-4
Land capability, nonirrigated: 6e-4
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 7 inches; gravelly loam
Bt2—7 to 17 inches; very gravelly clay loam
Bt3—17 to 29 inches; very gravelly clay loam
Bt4—29 to 39 inches; extremely gravelly clay loam
Bt5—39 to 50 inches; extremely gravelly clay loam
R—50 inches; bedrock

Characteristics of Rock Outcrop (Lovejoy Basalt)

Slope: 2 to 5 percent
Geomorphic position: The top of basalt plateaus
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 341

Thermalrocks and similar soils
Composition: 4 percent
Slope: 2 to 5 percent
Geomorphic position: The top of basalt plateaus
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 2 percent
Slope: 0 to 1 percent

Geomorphic position: Vernal pools on the top of basalt plateaus
Hydric soil status: Hydric

Fine-loamy soils that are 20 to 40 inches deep to lithic bedrock
Composition: 2 percent
Slope: 2 to 5 percent
Geomorphic position: Swales on the top of basalt plateaus
Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 2 percent
Slope: 2 to 5 percent
Geomorphic position: Mounds on the top of basalt plateaus
Hydric soil status: Not hydric

342—Thermalrocks-Beatsonhollow taxadjunct-Rock outcrop complex, 2 to 30 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 150 to 495 feet (46 to 152 meters)
Mean annual precipitation: 25 to 28 inches (635 to 711 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Thermalrocks very gravelly loam—40 percent
Beatsonhollow taxadjunct fine sandy loam—35 percent
Rock outcrop (Lovejoy basalt)—15 percent
Minor components—10 percent

Characteristics of Thermalrocks Very Gravelly Loam

Slope: 2 to 30 percent
Geomorphic position: Swales on the top and side slopes of the eroded remnants of basalt plateaus
Parent material: Gravelly residuum weathered from basalt
Observed vegetation: Annual grasses and forbs, mosses, and lichens
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, angular gravel, 0 to 25 percent angular cobbles, 0 to 10 percent angular stones
Depth to a restrictive feature (lithic bedrock): 5 to 10 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.4 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; very gravelly loam
Bt—1 to 5 inches; very gravelly loam
R—5 inches; bedrock

Characteristics of Beatsonhollow Taxadjunct Fine Sandy Loam

Slope: 2 to 30 percent
Geomorphic position: Mounds on the top and side slopes of the eroded remnants of basalt plateaus
Parent material: Loamy and gravelly residuum weathered from basalt
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 5 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 5 to 20 inches
Available water capacity: Very low (about 2.4 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6e-8
Land capability, nonirrigated: 6e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; fine sandy loam
Bt1—1 to 6 inches; gravelly loam
Bt2—6 to 10 inches; gravelly loam
Bt3—10 to 15 inches; gravelly loam
Bt4—15 to 18 inches; very gravelly loam
R—18 inches; bedrock

Characteristics of Rock Outcrop (Lovejoy Basalt)

Slope: 2 to 30 percent
Geomorphic position: The top and side slopes of the eroded remnants of basalt plateaus
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 342

Beatsonhollow and similar soils
Composition: 4 percent

Slope: 2 to 30 percent
Geomorphic position: Swales on the top and side slopes of the eroded remnants of basalt plateaus
Hydric soil status: Hydric

Campbellhills gravelly loam and similar soils
Composition: 3 percent
Slope: 2 to 30 percent
Geomorphic position: Fractures on the top of eroded basalt plateaus
Hydric soil status: Not hydric

Elsey and similar soils
Composition: 2 percent
Slope: 2 to 30 percent
Geomorphic position: Mounds on the top and side slopes of the eroded remnants of basalt plateaus
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Vernal pools on the top of the eroded remnants of basalt plateaus
Hydric soil status: Hydric

343—Coalcanyon-Coonhollow complex, 5 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 200 to 1,000 feet (61 to 305 meters)
Mean annual precipitation: 25 to 35 inches (635 to 889 millimeters)
Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Coalcanyon very cobbly loam—50 percent
Coonhollow gravelly loam—35 percent
Minor components—15 percent

Characteristics of Coalcanyon Very Cobbly Loam

Slope: 5 to 15 percent
Geomorphic position: Benches and side slopes on basalt plateaus
Parent material: Stony and gravelly colluvium derived from basalt
Observed vegetation: Interior live oak, blue oak, valley oak, foothill pine, whiteleaf manzanita, and annual grasses and forbs
Texture of the surface layer: Very cobbly loam
Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 5 to 65 percent angular cobbles, 0 to 25 percent angular stones, 0 to 20 percent angular boulders

Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4s-7
Land capability, nonirrigated: 4s-7
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; very cobbly loam
BAt—2 to 11 inches; very cobbly loam
Bt1—11 to 27 inches; very cobbly loam
Bt2—27 to 43 inches; very cobbly loam
Bt3—43 to 65 inches; extremely cobbly clay loam

Characteristics of Coonhollow Gravelly Loam

Slope: 5 to 15 percent
Geomorphic position: Benches and side slopes on basalt plateaus
Parent material: Stony and gravelly colluvium derived from basalt
Observed vegetation: Interior live oak, blue oak, valley oak, foothill pine, whiteleaf manzanita, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 5 to 65 percent angular cobbles, 0 to 25 percent angular stones, 0 to 20 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4s-7
Land capability, nonirrigated: 4s-7
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 3 inches; gravelly loam
ABt—3 to 11 inches; very cobbly loam
Bt1—11 to 22 inches; very cobbly loam
Bt2—22 to 32 inches; extremely cobbly loam
Bt3—32 to 45 inches; extremely cobbly clay loam

Cr—45 to 50 inches; bedrock
R—50 inches; bedrock

Minor Components in Map Unit 343

Rock outcrop
Composition: 4 percent
Slope: 5 to 15 percent
Geomorphic position: Benches and side slopes on basalt plateaus
Hydric soil status: Not hydric

Soils that are less than 60 inches deep to sediments of the lone Formation
Composition: 4 percent
Slope: 5 to 15 percent
Geomorphic position: Benches and side slopes on basalt plateaus
Hydric soil status: Not hydric

Elsey and similar soils
Composition: 4 percent
Slope: 5 to 15 percent
Geomorphic position: Benches and side slopes on basalt plateaus
Hydric soil status: Not hydric

Seeps
Composition: 2 percent
Slope: 5 to 15 percent
Geomorphic position: Benches and side slopes on basalt plateaus
Hydric soil status: Hydric

Cherokeespring and similar soils
Composition: 1 percent
Slope: 5 to 15 percent
Geomorphic position: Benches and side slopes on basalt plateaus
Hydric soil status: Not hydric

344—Coalcanyon-Coonhollow-Rock outcrop complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 200 to 1,000 feet (61 to 305 meters)
Mean annual precipitation: 25 to 35 inches (635 to 889 millimeters)
Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Coalcanyon very cobbly loam—45 percent
Coonhollow gravelly loam—30 percent
Rock outcrop (Lovejoy basalt)—15 percent
Minor components—10 percent

Characteristics of Coalcanyon Very Cobbly Loam

Slope: 15 to 30 percent

Geomorphic position: Side slopes on basalt plateaus
Parent material: Stony and gravelly colluvium derived from basalt
Observed vegetation: Interior live oak, blue oak, valley oak, foothill pine, whiteleaf manzanita, and annual grasses and forbs
Texture of the surface layer: Very cobbly loam
Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 5 to 65 percent angular cobbles, 0 to 25 percent angular stones, 0 to 20 percent angular boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4s-7
Land capability, nonirrigated: 4s-7
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; very cobbly loam
BAt—2 to 11 inches; very cobbly loam
Bt1—11 to 27 inches; very cobbly loam
Bt2—27 to 43 inches; very cobbly loam
Bt3—43 to 65 inches; extremely cobbly clay loam

Characteristics of Coonhollow Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt plateaus
Parent material: Stony and gravelly colluvium derived from basalt
Observed vegetation: Interior live oak, blue oak, valley oak, foothill pine, whiteleaf manzanita, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 5 to 65 percent angular cobbles, 0 to 25 percent angular stones, 0 to 20 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4s-7
Land capability, nonirrigated: 4s-7

Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 3 inches; gravelly loam
ABt—3 to 11 inches; very cobbly loam
Bt1—11 to 22 inches; very cobbly loam
Bt2—22 to 32 inches; extremely cobbly loam
Bt3—32 to 45 inches; extremely cobbly clay loam
Cr—45 to 50 inches; bedrock
R—50 inches; bedrock

Characteristics of Rock Outcrop (Lovejoy Basalt)

Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt plateaus
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 344

Soils that are less than 60 inches deep to sediments of the Ione Formation
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt plateaus
Hydric soil status: Not hydric

Talus
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt plateaus
Hydric soil status: Not hydric

Elsey and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt plateaus
Hydric soil status: Not hydric

346—Cherotable-Elsey complex, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, recreation, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 160 to 1,540 feet (50 to 470 meters)
Mean annual precipitation: 25 to 35 inches (635 to 889 millimeters)
Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Cherotable loam—50 percent
Elsey loam—35 percent
Minor components—15 percent

Characteristics of Cherotable Loam

Slope: 2 to 15 percent
Geomorphic position: The top of basalt plateaus
Parent material: Loamy alluvium derived from basalt
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 15 percent medium, subrounded gravel
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 20 to 60 inches
Available water capacity: Moderate (about 6.2 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; loam
Bt1—2 to 8 inches; loam
Bt2—8 to 14 inches; clay loam
Bt3—14 to 21 inches; gravelly clay loam
Bt4—21 to 30 inches; cobbly clay loam
Bt5—30 to 45 inches; very cobbly clay
R—45 inches; bedrock

Characteristics of Elsey Loam

Slope: 2 to 15 percent
Geomorphic position: Mounds on the top of basalt plateaus
Parent material: Loamy residuum weathered from basalt
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 5 to 15 percent medium, subangular gravel, 0 to 5 percent subangular cobbles
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 15 to 40 inches
Available water capacity: Low (about 4.7 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6e-8
Land capability, nonirrigated: 6e-8

Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 3 inches; loam
BAt—3 to 8 inches; gravelly loam
Bt1—8 to 17 inches; cobbly loam
Bt2—17 to 25 inches; cobbly loam
Bt3—25 to 32 inches; very cobbly loam
Bt4—32 to 38 inches; very cobbly loam
R—38 inches; bedrock

Minor Components in Map Unit 346

Rock outcrop
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: The top of basalt plateaus
Hydric soil status: Not hydric

Thermalrocks and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: The top of basalt plateaus
Hydric soil status: Not hydric

Campbellhills gravelly loam and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: The top of basalt plateaus
Hydric soil status: Not hydric

Seeps
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: The top of basalt plateaus
Hydric soil status: Hydric

347—Haplic Palexeralfs loam, 0 to 5 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 150 to 1,095 feet (46 to 335 meters)
Mean annual precipitation: 25 to 30 inches (635 to 762 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Haplic Palexeralfs loam—90 percent
Minor components—10 percent

Characteristics of Haplic Palexeralfs Loam

Slope: 0 to 5 percent

Geomorphic position: Low stream terraces
Parent material: Loamy and very gravelly alluvium over clayey and gravelly alluvium derived from basalt
Observed vegetation: Annual grasses and forbs and scattered valley oak, cottonwood, and willows
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 5 to 50 percent subrounded cobbles
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Occasional
Annual ponding frequency: None
Depth to a water table (zone of saturation): 60 to 80 inches
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 3s-4
Land capability, nonirrigated: 3s-4
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 3 inches; loam
Bt1—3 to 9 inches; very gravelly loam
Bt2—9 to 22 inches; very gravelly clay loam
2Bt3—22 to 31 inches; extremely gravelly sandy clay
2Bt4—31 to 45 inches; extremely gravelly sandy clay loam
2Bt5—45 to 52 inches; extremely gravelly sandy clay
3Bt6—52 to 64 inches; extremely cobbly sandy clay

Minor Components in Map Unit 347

Soils that are less than 60 inches deep to lone sandstone bedrock
Composition: 5 percent
Slope: 0 to 5 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Soils that are less than 60 inches deep to lithic bedrock
Composition: 3 percent
Slope: 0 to 5 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Durixeralfs and Petraquepts and similar soils
Composition: 2 percent
Slope: 0 to 5 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

353—Cherokeespring gravelly silt loam, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, orchard crops, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 455 to 1,440 feet (140 to 439 meters)
Mean annual precipitation: 27 to 37 inches (686 to 940 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Cherokeespring gravelly silt loam—80 percent
Minor components—20 percent

Characteristics of Cherokeespring Gravelly Silt Loam

Slope: 2 to 15 percent
Geomorphic position: Benches on side slopes on basalt plateaus
Parent material: Silty alluvium derived from basalt
Observed vegetation: Annual grasses and forbs, Pacific poison oak and other oaks, and olive orchards
Texture of the surface layer: Gravelly silt loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 0 to 5 percent subangular cobbles
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* High (about 8.1 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Low

Interpretive groups
- *Land capability, irrigated:* 3e-1
- *Land capability, nonirrigated:* 3e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- A—0 to 3 inches; gravelly silt loam
- Bt1—3 to 7 inches; gravelly silt loam
- Bt2—7 to 16 inches; gravelly silty clay loam
- Bt3—16 to 30 inches; gravelly silty clay loam
- Bt4—30 to 42 inches; gravelly silty clay loam
- Bt5—42 to 60 inches; very gravelly silty clay
- Bt6—60 to 68 inches; very gravelly silty clay

Minor Components in Map Unit 353

Coalcanyon very cobbly loam and similar soils
Composition: 6 percent
Slope: 2 to 15 percent
Geomorphic position: Benches on side slopes on basalt plateaus
Hydric soil status: Not hydric

Coonhollow gravelly loam and similar soils
Composition: 6 percent
Slope: 2 to 15 percent
Geomorphic position: Benches on side slopes on basalt plateaus
Hydric soil status: Not hydric

Palexerults and similar soils
Composition: 4 percent
Slope: 2 to 15 percent
Geomorphic position: Benches on side slopes on basalt plateaus
Hydric soil status: Not hydric

Seeps
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Benches on side slopes on basalt plateaus
Hydric soil status: Hydric

Rock outcrop
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Benches on side slopes on basalt plateaus
Hydric soil status: Not hydric

355—Coalcanyon-Talus complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 400 to 1,495 feet (122 to 457 meters)
Mean annual precipitation: 25 to 35 inches (635 to 889 millimeters)
Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Coalcanyon very cobbly loam—55 percent
Talus—35 percent
Minor components—10 percent

Characteristics of Coalcanyon Very Cobbly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt plateaus
Parent material: Stony and gravelly colluvium derived from basalt
Observed vegetation: Interior live oak, blue oak, valley oak, foothill pine, whiteleaf manzanita, and annual grasses and forbs
Texture of the surface layer: Very cobbly loam

Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 5 to 65 percent angular cobbles, 0 to 25 percent angular stones, 0 to 20 percent angular boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4s-7
Land capability, nonirrigated: 4s-7
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; very cobbly loam
BAt—2 to 11 inches; very cobbly loam
Bt1—11 to 27 inches; very cobbly loam
Bt2—27 to 43 inches; very cobbly loam
Bt3—43 to 65 inches; extremely cobbly clay loam

Characteristics of Talus

Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt plateaus
Surface runoff (bare conditions): Negligible
Definition: This talus consists of a pile of basalt rocks that accumulated at the base of a cliff by falling, sliding, or rolling from the cliff face.

Minor Components in Map Unit 355

Rock outcrop
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt plateaus
Hydric soil status: Not hydric

Coonhollow gravelly loam and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt plateaus
Hydric soil status: Not hydric

356—Coalcanyon-Rock outcrop, cliffs-Talus-Coonhollow complex, 30 to 200 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills

Elevation: 400 to 1,495 feet (122 to 457 meters)
Mean annual precipitation: 25 to 35 inches (635 to 889 millimeters)
Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Coalcanyon very cobbly loam—45 percent
Rock outcrop, basalt cliffs—20 percent
Talus—20 percent
Coonhollow gravelly loam—10 percent
Minor components—5 percent

Characteristics of Coalcanyon Very Cobbly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on basalt plateaus
Parent material: Stony and gravelly colluvium derived from basalt
Observed vegetation: Interior live oak, blue oak, valley oak, foothill pine, whiteleaf manzanita, and annual grasses and forbs
Texture of the surface layer: Very cobbly loam
Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 5 to 65 percent angular cobbles, 0 to 25 percent angular stones, 0 to 20 percent angular boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-7
Land capability, nonirrigated: 6e-7
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; very cobbly loam
BAt—2 to 11 inches; very cobbly loam
Bt1—11 to 27 inches; very cobbly loam
Bt2—27 to 43 inches; very cobbly loam
Bt3—43 to 65 inches; extremely cobbly clay loam

Characteristics of Rock Outcrop, Basalt Cliffs

Slope: 50 to 200 percent
Geomorphic position: Backslopes on basalt plateaus
Surface runoff (bare conditions): Very high
Definition: A cliff is any high, very steep to perpendicular or overhanging face of rock.

Characteristics of Talus

Slope: 50 to 70 percent
Geomorphic position: Footslopes on plateaus
Surface runoff (bare conditions): Negligible

Definition: This talus consists of a pile of basalt rocks that accumulated at the base of a cliff by falling, sliding, or rolling from the cliff face.

Characteristics of Coonhollow Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on basalt plateaus
Parent material: Gravelly colluvium derived from basalt
Observed vegetation: Interior live oak, blue oak, valley oak, foothill pine, whiteleaf manzanita, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 10 to 60 percent medium, angular gravel, 5 to 65 percent angular cobbles, 0 to 25 percent angular stones, 0 to 20 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 3.2 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 6e-7
- *Land capability, nonirrigated:* 6e-7
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- A—0 to 3 inches; gravelly loam
- ABt—3 to 11 inches; very cobbly loam
- Bt1—11 to 22 inches; very cobbly loam
- Bt2—22 to 32 inches; extremely cobbly loam
- Bt3—32 to 45 inches; extremely cobbly clay loam
- Cr—45 to 50 inches; bedrock
- R—50 inches; bedrock

Minor Components in Map Unit 356

Soils that are less than 60 inches deep to sediments of the Ione Formation
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on basalt plateaus
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on basalt plateaus
Hydric soil status: Not hydric

Campbellhills gravelly loam and similar soils
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on basalt plateaus
Hydric soil status: Not hydric

360—Typic Xerofluvents complex, 0 to 2 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Source of aggregate, wildlife habitat, watershed, and livestock grazing
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 150 to 360 feet (46 to 110 meters)
Mean annual precipitation: 24 to 30 inches (610 to 762 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 258 days

Map Unit Composition

Typic Xerofluvents, coarse-loamy—45 percent
Typic Xerofluvents, sandy-skeletal—40 percent
Minor components—15 percent

Characteristics of Typic Xerofluvents, Coarse-Loamy

Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Parent material: Sandy and gravelly alluvium generated from hydraulic mines and derived from sedimentary rocks
Observed vegetation: Annual grasses and forbs and, in riparian areas, cottonwood, California sycamore, valley oak, black walnut, California grape, and willows
Texture of the surface layer: Gravelly loamy sand
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subrounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Natural hydrology has been significantly altered. Sediment pulses were released into drainageways during hydraulic mining activities. These sediments quickly filled in natural channels and built up on the flood plain. Levees constructed on the flood plain were intended to confine the mine sediments. Some levees were breached, and natural channels are becoming reestablished.
- *Annual flooding frequency:* Rare
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 20 to 94 inches
- *Available water capacity:* Moderate (about 5.7 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Negligible

Interpretive groups
- *Land capability, irrigated:* 2s-4
- *Land capability, nonirrigated:* 3s-4
- *Storie index:* 46 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* A

Typical profile
- A—0 to 3 inches; gravelly loamy sand
- C1—3 to 11 inches; gravelly coarse sandy loam
- C2—11 to 20 inches; gravelly coarse sandy loam

C3—20 to 24 inches; sand
C4—24 to 31 inches; gravelly sand
C5—31 to 45 inches; silt loam
C6—45 to 51 inches; gravelly sand
C7—51 to 66 inches; silt
C8—66 to 84 inches; very gravelly coarse sand
C9—84 to 95 inches; extremely gravelly coarse sand

Characteristics of Typic Xerofluvents, Sandy-Skeletal

Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Parent material: Sandy and gravelly alluvium generated from hydraulic mines and derived from sedimentary rocks
Observed vegetation: Annual grasses and forbs and, in riparian areas, cottonwood, California sycamore, valley oak, black walnut, California grape, and willows
Texture of the surface layer: Gravelly loamy coarse sand
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subrounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Natural hydrology has been significantly altered. Sediment pulses were released into drainageways during hydraulic mining activities. These sediments quickly filled in natural channels and built up on the flood plain. Levees constructed on the flood plain were intended to confine the mine sediments. Some levees were breached, and natural channels are becoming reestablished.
Annual flooding frequency: Rare
Annual ponding frequency: None
Depth to a water table (zone of saturation): 20 to 98 inches
Available water capacity: Very low (about 1.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 7s-4
Land capability, nonirrigated: 7s-4
Storie index: 46 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
A—0 to 3 inches; gravelly loamy coarse sand
C1—3 to 9 inches; very gravelly loamy coarse sand
C2—9 to 16 inches; very gravelly coarse sand
C3—16 to 22 inches; very gravelly coarse sand
C4—22 to 30 inches; very gravelly coarse sand
C5—30 to 40 inches; very gravelly coarse sand
C6—40 to 50 inches; gravelly sand
C7—50 to 98 inches; extremely gravelly coarse sand

Minor Components in Map Unit 360

Typic Xerofluvents, sandy, and similar soils
Composition: 9 percent
Slope: 0 to 2 percent

Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Soils that have a loamy-skeletal substratum
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Soils that have a clayey buried substratum
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

361—Typic Xerofluvents, sandy-skeletal, 0 to 2 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Source of aggregate, wildlife habitat, watershed, and livestock grazing
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 360 to 600 feet (110 to 183 meters)
Mean annual precipitation: 30 to 35 inches (762 to 889 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 258 to 260 days

Map Unit Composition

Typic Xerofluvents, sandy-skeletal—85 percent
Minor components—15 percent

Characteristics of Typic Xerofluvents, Sandy-Skeletal

Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Parent material: Sandy and gravelly alluvium generated from hydraulic mines and derived from sedimentary rocks
Observed vegetation: Annual grasses and forbs and, in riparian areas, cottonwood, California sycamore, valley oak, black walnut, California grape, and willows
Texture of the surface layer: Gravelly loamy coarse sand
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subrounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Natural hydrology has been significantly altered. Sediment pulses were released into drainageways during hydraulic mining activities. These sediments quickly filled in natural channels and built up on the flood plain. Levees constructed on the flood plain were intended to confine the mine sediments. Some levees were breached, and natural channels are becoming reestablished.
Annual flooding frequency: Rare
Annual ponding frequency: None

Depth to a water table (zone of saturation): 20 to 98 inches
Available water capacity: Very low (about 1.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 7s-4
Land capability, nonirrigated: 7s-4
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
A—0 to 3 inches; gravelly loamy coarse sand
C1—3 to 9 inches; very gravelly loamy coarse sand
C2—9 to 16 inches; very gravelly coarse sand
C3—16 to 22 inches; very gravelly coarse sand
C4—22 to 30 inches; very gravelly coarse sand
C5—30 to 40 inches; very gravelly coarse sand
C6—40 to 50 inches; gravelly sand
C7—50 to 98 inches; extremely gravelly coarse sand

Minor Components in Map Unit 361

Typic Xerofluvents, coarse-loamy, and similar soils
Composition: 9 percent
Slope: 0 to 2 percent
Geomorphic position: Areas of hydraulic-mine sediment on stream terraces
Hydric soil status: Not hydric

Soils that have a loamy-skeletal substratum
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Areas of hydraulic-mine sediment on stream terraces
Hydric soil status: Not hydric

Soils that have a clayey buried substratum
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Areas of hydraulic-mine sediment on stream terraces
Hydric soil status: Not hydric

362—Ultic Haploxeralfs, sandstone, low elevation, complex, 2 to 5 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Areas of marine sandstone exposed in Southern Cascade foothills
Elevation: 295 to 495 feet (91 to 152 meters)
Mean annual precipitation: 28 to 32 inches (711 to 813 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 255 to 260 days

Map Unit Composition

Ultic Haploxeralfs, sandstone, low elevation, very deep—60 percent

Ultic Haploxeralfs, sandstone, low elevation, deep—25 percent
Minor components—15 percent

Characteristics of Ultic Haploxeralfs, Sandstone, Low Elevation, Very Deep

Slope: 2 to 5 percent
Geomorphic position: Footslopes on hills
Parent material: Fine-loamy residuum weathered from sandstone
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: 0 to 5 percent well rounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 90 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 2e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; sandy loam
Bt1—2 to 8 inches; sandy clay loam
Bt2—8 to 18 inches; sandy clay loam
Bt3—18 to 28 inches; sandy clay loam
Bt4—28 to 39 inches; sandy clay loam
BCt—39 to 49 inches; sandy clay loam
C1—49 to 56 inches; sandy clay loam
C2—56 to 70 inches; sandy loam

Characteristics of Ultic Haploxeralfs, Sandstone, Low Elevation, Deep

Slope: 2 to 5 percent
Geomorphic position: Convex footslopes on hills
Parent material: Fine-loamy residuum weathered from sandstone
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 5 percent well rounded gravel
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.0 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 2e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 3 inches; fine sandy loam
Bt1—3 to 8 inches; sandy clay loam
Bt2—8 to 15 inches; sandy clay loam
BCt1—15 to 24 inches; fine sandy loam
BCt2—24 to 32 inches; loam
BCt3—32 to 41 inches; very fine sandy loam
Cr—41 inches; bedrock

Minor Components in Map Unit 362

Redsluff taxadjunct and similar soils
Composition: 4 percent
Slope: 2 to 3 percent
Geomorphic position: Strath terraces
Hydric soil status: Not hydric

Palexerults and similar soils
Composition: 4 percent
Slope: 2 to 5 percent
Geomorphic position: Footslopes on sedimentary hills
Hydric soil status: Not hydric

Ultic Haploxeralfs, fine, and similar soils
Composition: 3 percent
Slope: 2 to 5 percent
Geomorphic position: Footslopes on sedimentary hills
Hydric soil status: Not hydric

Carhart and similar soils
Composition: 2 percent
Slope: 2 to 5 percent
Geomorphic position: Footslopes on sedimentary hills
Hydric soil status: Hydric

Ultic Haploxeralfs with paralithic bedrock at a depth of 20 to 40 inches and similar soils
Composition: 1 percent
Slope: 2 to 5 percent
Geomorphic position: Convex footslopes on sedimentary hills
Hydric soil status: Not hydric

Seeps
Composition: 1 percent
Slope: 2 to 5 percent
Geomorphic position: Footslopes on sedimentary hills
Hydric soil status: Hydric

363—Ultic Haploxeralfs, sandstone, low elevation, complex, 5 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Areas of marine sandstone exposed in Southern Cascade foothills
Elevation: 340 to 635 feet (104 to 195 meters)
Mean annual precipitation: 28 to 32 inches (711 to 813 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 255 to 260 days

Map Unit Composition

Ultic Haploxeralfs, sandstone, low elevation, very deep—60 percent
Ultic Haploxeralfs, sandstone, low elevation, deep—30 percent
Minor components—10 percent

Characteristics of Ultic Haploxeralfs, Sandstone, Low Elevation, Very Deep

Slope: 5 to 15 percent
Geomorphic position: Side slopes on hills
Parent material: Fine-loamy residuum weathered from sandstone
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: 0 to 5 percent well rounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 90 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; sandy loam
Bt1—2 to 8 inches; sandy clay loam
Bt2—8 to 18 inches; sandy clay loam
Bt3—18 to 28 inches; sandy clay loam
Bt4—28 to 39 inches; sandy clay loam
BCt—39 to 49 inches; sandy clay loam
C1—49 to 56 inches; sandy clay loam
C2—56 to 70 inches; sandy loam

Characteristics of Ultic Haploxeralfs, Sandstone, Low Elevation, Deep

Slope: 5 to 15 percent
Geomorphic position: Nose slopes on hills
Parent material: Fine-loamy residuum weathered from sandstone
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 5 percent well rounded gravel
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 3 inches; fine sandy loam
Bt1—3 to 8 inches; sandy clay loam
Bt2—8 to 15 inches; sandy clay loam
BCt1—15 to 24 inches; fine sandy loam
BCt2—24 to 32 inches; loam
BCt3—32 to 41 inches; very fine sandy loam
Cr—41 inches; bedrock

Minor Components in Map Unit 363

Palexerults and similar soils
Composition: 3 percent
Slope: 5 to 15 percent
Geomorphic position: Side slopes on sedimentary hills
Hydric soil status: Not hydric

Ultic Haploxeralfs, fine, and similar soils
Composition: 2 percent
Slope: 5 to 15 percent
Geomorphic position: Side slopes on sedimentary hills
Hydric soil status: Not hydric

Carhart and similar soils
Composition: 2 percent
Slope: 5 to 15 percent
Geomorphic position: Side slopes on sedimentary hills
Hydric soil status: Hydric

Ultic Haploxeralfs with paralithic bedrock at a depth of 20 to 40 inches and similar soils
Composition: 2 percent
Slope: 5 to 15 percent

Geomorphic position: Nose slopes on sedimentary hills
Hydric soil status: Not hydric

Seeps
Composition: 1 percent
Slope: 5 to 15 percent
Geomorphic position: Side slopes on sedimentary hills
Hydric soil status: Hydric

364—Ultic Haploxeralfs, sandstone, low elevation, complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Areas of marine sandstone exposed in Southern Cascade foothills
Elevation: 340 to 620 feet (104 to 189 meters)
Mean annual precipitation: 28 to 32 inches (711 to 813 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 255 to 260 days

Map Unit Composition

Ultic Haploxeralfs, sandstone, low elevation, deep—50 percent
Ultic Haploxeralfs, sandstone, low elevation, very deep—40 percent
Minor components—10 percent

Characteristics of Ultic Haploxeralfs, Sandstone, Low Elevation, Deep

Slope: 15 to 30 percent
Geomorphic position: Nose slopes on hills
Parent material: Fine-loamy residuum weathered from sandstone
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 5 percent well rounded gravel
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 3 inches; fine sandy loam
Bt1—3 to 8 inches; sandy clay loam

Bt2—8 to 15 inches; sandy clay loam
BCt1—15 to 24 inches; fine sandy loam
BCt2—24 to 32 inches; loam
BCt3—32 to 41 inches; very fine sandy loam
Cr—41 inches; bedrock

Characteristics of Ultic Haploxeralfs, Sandstone, Low Elevation, Very Deep

Slope: 15 to 30 percent
Geomorphic position: Side slopes on hills
Parent material: Fine-loamy colluvium derived from sandstone
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: 0 to 5 percent well rounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 90 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; sandy loam
Bt1—2 to 8 inches; sandy clay loam
Bt2—8 to 18 inches; sandy clay loam
Bt3—18 to 28 inches; sandy clay loam
Bt4—28 to 39 inches; sandy clay loam
BCt—39 to 49 inches; sandy clay loam
C1—49 to 56 inches; sandy clay loam
C2—56 to 70 inches; sandy loam

Minor Components in Map Unit 364

Ultic Haploxeralfs with paralithic bedrock at a depth of 20 to 40 inches and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Nose slopes on sedimentary hills
Hydric soil status: Not hydric

Palexerults and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on sedimentary hills
Hydric soil status: Not hydric

Ultic Haploxeralfs, fine, and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on sedimentary hills
Hydric soil status: Not hydric

Carhart and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on sedimentary hills
Hydric soil status: Hydric

Seeps
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on sedimentary hills
Hydric soil status: Hydric

365—Palexerults, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 225 to 1,380 feet (70 to 422 meters)
Mean annual precipitation: 26 to 40 inches (660 to 1,016 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Palexerults gravelly loam—80 percent
Minor components—20 percent

Characteristics of Palexerults Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Footslopes and backslopes on hills
Parent material: Fine-loamy colluvium derived from volcanic and sedimentary rocks over clayey residuum weathered from claystone
Observed vegetation: Annual grasses and forbs; oaks, buckbrush, and manzanita at the higher elevations
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent rounded cobbles, 0 to 5 percent angular stones, 0 to 3 percent angular boulders, 0 to 20 percent medium, rounded gravel
Depth to a restrictive feature (densic bedrock): 60 to 90 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.8 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 12 inches; gravelly loam
Bt2—12 to 20 inches; clay loam
2Bt3—20 to 29 inches; silty clay
2BCt—29 to 46 inches; silty clay
2C—46 to 65 inches; silty clay
2Cd—65 inches; bedrock

Minor Components in Map Unit 365

Palexerults, clayey-skeletal, and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes and backslopes on hills
Hydric soil status: Not hydric

Coalcanyon very cobbly loam and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes and backslopes on hills
Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, low elevation, and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes and backslopes on hills
Hydric soil status: Not hydric

Seeps
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes and backslopes on hills
Hydric soil status: Hydric

Carhart and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes and backslopes on hills
Hydric soil status: Hydric

Chinacamp and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes and backslopes on hills
Hydric soil status: Not hydric

366—Palexerults, 30 to 50 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 455 to 1,400 feet (140 to 427 meters)
Mean annual precipitation: 28 to 40 inches (711 to 1,016 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 255 to 260 days

Map Unit Composition

Palexerults gravelly loam—80 percent
Minor components—20 percent

Characteristics of Palexerults Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on hills
Parent material: Fine-loamy colluvium derived from volcanic and sedimentary rocks over clayey residuum weathered from claystone
Observed vegetation: Annual grasses and forbs; oaks, buckbrush, and manzanita at the higher elevations
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent rounded cobbles, 0 to 5 percent angular stones, 0 to 3 percent angular boulders, 0 to 20 percent medium, rounded gravel
Depth to a restrictive feature (densic bedrock): 60 to 90 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 12 inches; gravelly loam
Bt2—12 to 20 inches; clay loam
2Bt3—20 to 29 inches; silty clay
2BCt—29 to 46 inches; silty clay
2C—46 to 65 inches; silty clay
2Cd—65 inches; bedrock

Minor Components in Map Unit 366

Palexerults, clayey-skeletal, and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on hills
Hydric soil status: Not hydric

Coalcanyon very cobbly loam and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on hills
Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, low elevation, and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on hills
Hydric soil status: Not hydric

Seeps
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on hills
Hydric soil status: Hydric

Carhart and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on hills
Hydric soil status: Hydric

Chinacamp and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on hills
Hydric soil status: Not hydric

370—Palexerults, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 170 to 1,200 feet (53 to 366 meters)
Mean annual precipitation: 26 to 40 inches (660 to 1,016 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Palexerults gravelly loam—80 percent
Minor components—20 percent

Characteristics of Palexerults Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: Footslopes on hills
Parent material: Fine-loamy colluvium derived from volcanic and sedimentary rocks over clayey residuum weathered from claystone
Observed vegetation: Annual grasses and forbs; oaks, buckbrush, and manzanita at the higher elevations
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent rounded cobbles, 0 to 5 percent angular stones, 0 to 3 percent angular boulders, 0 to 20 percent medium, rounded gravel
Depth to a restrictive feature (densic bedrock): 60 to 90 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 12 inches; gravelly loam
Bt2—12 to 20 inches; clay loam
2Bt3—20 to 29 inches; silty clay
2BCt—29 to 46 inches; silty clay
2C—46 to 65 inches; silty clay
2Cd—65 inches; densic bedrock

Minor Components in Map Unit 370

Palexerults, clayey-skeletal, and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Footslopes on hills
Hydric soil status: Not hydric

Cherokeespring and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Footslopes on hills
Hydric soil status: Not hydric

Coalcanyon very cobbly loam and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Footslopes on hills
Hydric soil status: Not hydric

Seeps
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Footslopes on hills
Hydric soil status: Hydric

Carhart and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Footslopes on hills
Hydric soil status: Hydric

Wickscorner and similar soils
Composition: 2 percent
Slope: 2 to 10 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, low elevation, and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Footslopes on hills
Hydric soil status: Not hydric

Chinacamp and similar soils
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Footslopes on hills
Hydric soil status: Not hydric

375—Wickscorner loam, 2 to 10 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, orchard crops, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 245 to 655 feet (76 to 201 meters)
Mean annual precipitation: 24 to 29 inches (610 to 737 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Wickscorner loam—80 percent
Minor components—20 percent

Characteristics of Wickscorner Loam

Slope: 2 to 10 percent
Geomorphic position: Alluvial fans on Table Mountain
Parent material: Loamy alluvium over gravelly and clayey alluvium derived from basalt
Observed vegetation: Annual grasses and forbs and olive orchards
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subrounded gravel, 0 to 15 percent subrounded cobbles

Depth to a restrictive feature (duripan): 60 to 87 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 50 to 84 inches
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 2e-1
Land capability, nonirrigated: 3e-1
Storie index: 83 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; loam
Bt1—2 to 8 inches; loam
Bt2—8 to 22 inches; gravelly clay loam
2Bt3—22 to 38 inches; very gravelly clay loam
2Bt4—38 to 59 inches; very gravelly clay
3Bt5—59 to 72 inches; extremely gravelly sandy clay
3Bt6—72 to 84 inches; extremely gravelly sandy clay

Minor Components in Map Unit 375

Flagcanyon gravelly loam and similar soils
Composition: 8 percent
Slope: 2 to 10 percent
Geomorphic position: Alluvial fans on Table Mountain
Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to a duripan
Composition: 5 percent
Slope: 2 to 10 percent
Geomorphic position: Convex slopes on alluvial fans on Table Mountain
Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to a duripan
Composition: 5 percent
Slope: 2 to 10 percent
Geomorphic position: Convex slopes on alluvial fans on Table Mountain
Hydric soil status: Not hydric

Soils that are fine-loamy throughout and are more than 60 inches deep to a duripan
Composition: 2 percent
Slope: 2 to 10 percent
Geomorphic position: Large mounds on fan terraces
Hydric soil status: Not hydric

376—Flagcanyon-Wickscorner complex, 2 to 5 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, orchard crops, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 215 to 495 feet (67 to 152 meters)
Mean annual precipitation: 25 to 30 inches (635 to 762 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Flagcanyon gravelly loam—50 percent
Wickscorner loam—35 percent
Minor components—15 percent

Characteristics of Flagcanyon Gravelly Loam

Slope: 2 to 5 percent
Geomorphic position: Alluvial fans on Table Mountain
Parent material: Loamy and gravelly alluvium over cemented, clayey, and extremely gravelly alluvium derived from basalt
Observed vegetation: Annual grasses and forbs and olive orchards
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 0 to 15 percent subangular cobbles
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 16 to 40 inches
- *Available water capacity:* Low (about 2.7 inches)
- *Natural drainage class:* Moderately well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 3e-3
- *Land capability, nonirrigated:* 3e-3
- *Storie index:* 43 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A—0 to 3 inches; gravelly loam
- Bt1—3 to 9 inches; very gravelly loam
- Bt2—9 to 14 inches; very gravelly loam
- 2Bt3—14 to 30 inches; very gravelly clay loam
- 3Btq1—30 to 53 inches; extremely gravelly duripan
- 3Btq2—53 to 65 inches; extremely gravelly duripan

Characteristics of Wickscorner Loam

Slope: 2 to 5 percent
Geomorphic position: Alluvial fans on Table Mountain
Parent material: Loamy alluvium over gravelly and clayey alluvium derived from basalt
Observed vegetation: Annual grasses and forbs and olive orchards
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subrounded gravel, 0 to 5 percent subrounded cobbles
Depth to a restrictive feature (duripan): 60 to 84 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 50 to 84 inches
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 2e-1
Land capability, nonirrigated: 3e-1
Storie index: 86 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; loam
Bt1—2 to 8 inches; loam
Bt2—8 to 22 inches; gravelly clay loam
2Bt3—22 to 38 inches; very gravelly clay loam
2Bt4—38 to 59 inches; very gravelly clay
3Bt5—59 to 72 inches; extremely gravelly sandy clay
3Bt6—72 to 84 inches; extremely gravelly sandy clay

Minor Components in Map Unit 376

Clayey-skeletal soils that are 20 to 40 inches deep
Composition: 5 percent
Slope: 2 to 5 percent
Geomorphic position: Areas along drainageways on alluvial fans on Table Mountain
Hydric soil status: Not hydric

Soils that are fine-loamy throughout and are more than 60 inches deep to a duripan
Composition: 3 percent
Slope: 2 to 5 percent
Geomorphic position: Mounds on fan terraces on Table Mountain
Hydric soil status: Not hydric

Near irrigated areas, soils that have a high water table
Composition: 3 percent
Slope: 2 to 5 percent
Geomorphic position: Alluvial fans on Table Mountain
Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to a duripan
Composition: 2 percent

Slope: 2 to 5 percent
Geomorphic position: Fan terraces on Table Mountain
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 2 percent
Slope: 2 to 3 percent
Geomorphic position: Open depressions on fan terraces on Table Mountain
Hydric soil status: Hydric

377—Flagcanyon taxadjunct-Durixeralfs-Duraquerts complex, 0 to 5 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing and wildlife habitat
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 140 to 380 feet (44 to 116 meters)
Mean annual precipitation: 25 to 27 inches (635 to 686 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 250 days

Map Unit Composition

Flagcanyon taxadjunct fine sandy loam—55 percent
Durixeralfs, clayey-skeletal, loam—20 percent
Duraquerts gravelly clay—15 percent
Minor components—10 percent

Characteristics of Flagcanyon Taxadjunct Fine Sandy Loam

Slope: 0 to 5 percent
Geomorphic position: Mounds on fan terraces on Table Mountain
Parent material: Fine-loamy alluvium over clayey and very gravelly alluvium over cemented, sandy, and extremely gravelly alluvium derived from basalt
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, well rounded gravel
Depth to a restrictive feature: 20 to 40 inches to a duripan; 40 to 60 inches to an indurated duripan
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 16 to 40 inches
Available water capacity: Low (about 3.7 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 3e-3
Land capability, nonirrigated: 3e-3

Storie index: 48 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 3 inches; fine sandy loam
Bt1—3 to 7 inches; loam
Bt2—7 to 16 inches; clay loam
2Bt3—16 to 23 inches; very gravelly clay
2Bt4—23 to 31 inches; extremely gravelly clay
3Bq—31 to 63 inches; extremely gravelly duripan

Characteristics of Durixeralfs, Clayey-Skeletal, Loam

Slope: 0 to 5 percent
Geomorphic position: Swales on fan terraces on Table Mountain
Parent material: Loamy alluvium over clayey and very gravelly alluvium over cemented, extremely gravelly alluvium derived from basalt
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, rounded gravel, 2 to 20 percent rounded cobbles, 0 to 1 percent rounded stones
Depth to a restrictive feature (duripan): 10 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 20 inches
Available water capacity: Very low (about 1.7 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6e-2
Land capability, nonirrigated: 6e-2
Storie index: 34 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; loam
Bt1—1 to 4 inches; clay loam
2Bt2—4 to 9 inches; very gravelly clay
2Bt3—9 to 15 inches; very gravelly clay
3Bq—15 to 60 inches; extremely gravelly duripan

Characteristics of Duraquerts Gravelly Clay

Slope: 0 to 1 percent
Geomorphic position: Swales on fan terraces on Table Mountain
Parent material: Clayey and gravelly alluvium over cemented, very gravelly, and sandy alluvium derived from igneous, sedimentary, and metamorphic rocks
Observed vegetation: Annual grasses and forbs
Surface feature: Polygonal cracks open during dry periods.
Texture of the surface layer: Gravelly clay
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, well rounded gravel, 2 to 25 percent well rounded cobbles

Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Low (about 3.0 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 11 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 3 inches; gravelly clay
A2—3 to 6 inches; gravelly silty clay
Bss1—6 to 15 inches; silty clay
Bss2—15 to 21 inches; silty clay
Bw—21 to 23 inches; very gravelly silty clay
2Bq—23 to 60 inches; very gravelly duripan

Minor Components in Map Unit 377

Typic Petraquepts and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Swales on fan terraces on Table Mountain
Hydric soil status: Hydric

Clayey-skeletal soils that are 20 to 40 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Swales on fan terraces on Table Mountain
Hydric soil status: Hydric

Soils that have an indurated duripan
Composition: 2 percent
Slope: 0 to 5 percent
Geomorphic position: Fan terraces on Table Mountain
Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 5 percent
Geomorphic position: Mounds on fan terraces on Table Mountain
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on fan terraces on Table Mountain
Hydric soil status: Hydric

400—Subaco taxadjunct clay, 0 to 1 percent slopes

Map Unit Setting

General location: Southwestern Butte County and north-central Sutter County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 65 to 75 feet (20 to 23 meters)
Mean annual precipitation: 19 to 21 inches (483 to 533 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Subaco taxadjunct clay—85 percent
Minor components—15 percent

Characteristics of Subaco Taxadjunct Clay

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Clayey alluvium over cemented, fine-silty alluvium over dense, sandy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice and annual grasses and forbs
Surface feature: Most areas have been leveled for agriculture.
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature: 20 to 40 inches to a duripan; 40 to 60 inches to dense material
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* Rare
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 0 to 40 inches
- *Available water capacity:* Moderate (about 5.3 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* Low

Interpretive groups
- *Land capability, irrigated:* 5w-2
- *Land capability, nonirrigated:* 5w-2
- *Storie index:* 15 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* D

Typical profile
- A—0 to 8 inches; clay
- Bss—8 to 16 inches; silty clay
- Bkss—16 to 29 inches; silty clay
- Bk—29 to 35 inches; clay

2Bkqm—35 to 42 inches; duripan
2Cd—42 to 60 inches; dense sandy loam

Minor Components in Map Unit 400

Neerdobe clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Esquon clay and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that are 10 to 20 inches deep to a duripan
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Gridley taxadjunct clay loam and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Saline soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

415—Ignord fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

General location: West-central Butte County
Major uses: Orchard crops, row crops, and grain crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 110 to 155 feet (35 to 48 meters)
Mean annual precipitation: 20 to 22 inches (508 to 559 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Ignord fine sandy loam—90 percent
Minor components—10 percent

Characteristics of Ignord Fine Sandy Loam

Slope: 0 to 2 percent
Geomorphic position: Wave-worked distal alluvial fans
Parent material: Coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Almond and walnut orchards, wheat, and valley oak
Surface feature: The surface has been leveled for agriculture.
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 7.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 2s-6
Land capability, nonirrigated: 3s-6
Storie index: 85 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Akp—0 to 4 inches; fine sandy loam
Ak1—4 to 14 inches; fine sandy loam
Ak2—14 to 25 inches; sandy loam
Ak3—25 to 32 inches; fine sandy loam
Bk—32 to 53 inches; sandy loam
Bkq—53 to 58 inches; fine sandy loam
B´k—58 to 77 inches; fine sandy loam

Minor Components in Map Unit 415

Vina fine sandy loam and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Almendra and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Soils that have 1 to 15 percent gravel throughout
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Wave-worked distal alluvial fans
Hydric soil status: Not hydric

Bosquejo clay and similar soils
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Interfan basins
Hydric soil status: Not hydric

416—Calcic Haploxerolls, 0 to 1 percent slopes

Map Unit Setting

General location: Southwestern Butte County
Major uses: Irrigated cropland, irrigated pasture, homesite development, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 65 to 85 feet (20 to 27 meters)
Mean annual precipitation: 18 to 19 inches (457 to 483 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Calcic Haploxerolls sandy loam—90 percent
Minor components—10 percent

Characteristics of Calcic Haploxerolls Sandy Loam

Slope: 0 to 1 percent
Geomorphic position: Low terraces
Parent material: Coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Annual grasses and forbs and rice
Surface feature: Some areas have been leveled for agriculture.
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (dense material): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Hydrology has been altered in areas leveled for agriculture.
- *Annual flooding frequency:* Rare
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 11 to 60 inches
- *Available water capacity:* Moderate (about 5.6 inches)
- *Natural drainage class:* Moderately well drained
- *Surface runoff (bare conditions):* Very low

Interpretive groups
- *Land capability, irrigated:* 3s-6
- *Land capability, nonirrigated:* 3s-6
- *Storie index:* 67 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- A—0 to 5 inches; sandy loam
- Ak—5 to 17 inches; sandy loam
- Bk1—17 to 20 inches; sandy loam
- Bk2—20 to 33 inches; sandy loam
- C—33 to 44 inches; sandy loam
- 2Cd—44 to 72 inches; dense material

Minor Components in Map Unit 416

Calcic Haploxerolls that are loam throughout and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Calcic Haploxerolls clay loam and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Low terraces
Hydric soil status: Not hydric

418—Almendra loam, 0 to 1 percent slopes

Map Unit Setting

General location: West-central Butte County
Major uses: Orchard crops, row crops, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 110 to 225 feet (35 to 70 meters)
Mean annual precipitation: 20 to 26 inches (508 to 660 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 255 days

Map Unit Composition

Almendra loam—85 percent
Minor components—15 percent

Characteristics of Almendra Loam

Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Parent material: Loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Almond, walnut, and kiwi orchards, beans, small grain crops, and valley oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.4 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 1
Land capability, nonirrigated: 3c-1
Storie index: 94 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Ap1—0 to 4 inches; loam
Ap2—4 to 14 inches; loam
Bw1—14 to 29 inches; loam
Bw2—29 to 40 inches; loam
Bw3—40 to 52 inches; loam
Bw4—52 to 74 inches; very fine sandy loam
Bw5—74 to 86 inches; very fine sandy loam

Minor Components in Map Unit 418

Conejo clay loam and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Soils that have a water table at a depth of 30 to 72 inches
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Filled channels on alluvial fans
Hydric soil status: Not hydric

Soils that have weakly cemented material below a depth of 40 inches
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Vina fine sandy loam and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Charger and similar soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Chico and similar soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Low fan terraces
Hydric soil status: Not hydric

419—Conejo fine sandy loam, 0 to 1 percent slopes, overwash

Map Unit Setting

General location: West-central Butte County
Major uses: Orchard crops and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 140 to 180 feet (43 to 56 meters)
Mean annual precipitation: 22 to 24 inches (559 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 255 days

Map Unit Composition

Conejo fine sandy loam, overwash—85 percent
Minor components—15 percent

Characteristics of Conejo Fine Sandy Loam, Overwash

Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Parent material: Coarse-loamy alluvium derived from igneous and metamorphic rocks over fine-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Almond and walnut orchards and valley oak
Surface feature: The surface has been leveled for agriculture.
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very high (about 10.9 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Negligible

Interpretive groups
- *Land capability, irrigated:* 1
- *Land capability, nonirrigated:* 3c-1
- *Storie index:* 89 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Ap—0 to 17 inches; fine sandy loam
- Ab—17 to 35 inches; clay loam
- A/B—35 to 45 inches; clay loam
- Bw1—45 to 56 inches; clay loam
- Bw2—56 to 62 inches; loam
- Bw3—62 to 70 inches; loam
- Bw4—70 to 72 inches; loam

Minor Components in Map Unit 419

Almendra loam and similar soils
Composition: 4 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Conejo clay loam and similar soils
Composition: 4 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Charger and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Soils that have a water table at a depth of 30 to 72 inches
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Filled channels on alluvial fans
Hydric soil status: Not hydric

Typic Xerofluvents, coarse-loamy, and similar soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

420—Conejo clay loam, 0 to 1 percent slopes

Map Unit Setting

General location: West-central Butte County
Major uses: Orchard crops, row crops, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 110 to 180 feet (34 to 56 meters)
Mean annual precipitation: 20 to 24 inches (508 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Conejo clay loam—85 percent
Minor components—15 percent

Characteristics of Conejo Clay Loam

Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Parent material: Fine-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Almond and walnut orchards, beans, and valley oak
Surface feature: The surface has been leveled for agriculture.
Texture of the surface layer: Clay loam

Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 11.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 1
Land capability, nonirrigated: 3c-1
Storie index: 85 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Ap—0 to 5 inches; clay loam
A1—5 to 19 inches; clay loam
A2—19 to 30 inches; clay loam
Bw1—30 to 48 inches; clay loam
Bw2—48 to 70 inches; sandy loam

Minor Components in Map Unit 420

Almendra and similar soils
Composition: 4 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Busacca and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Soils that have a water table at a depth of 30 to 72 inches
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Filled channels on alluvial fans
Hydric soil status: Not hydric

Soils that are more than 40 inches deep to weakly cemented material
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Edjobe and similar soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Bosquejo clay and similar soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Interfan basins
Hydric soil status: Not hydric

425—Vina fine sandy loam, 0 to 1 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Orchard crops and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 140 to 235 feet (43 to 72 meters)
Mean annual precipitation: 22 to 25 inches (559 to 635 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 255 days

Map Unit Composition

Vina fine sandy loam—85 percent
Minor components—15 percent

Characteristics of Vina Fine Sandy Loam

Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Parent material: Coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Almond and walnut orchards and valley oak
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 2s-11
Land capability, nonirrigated: 3c-11
Storie index: 85 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Ap1—0 to 3 inches; fine sandy loam
Ap2—3 to 11 inches; fine sandy loam
A1—11 to 23 inches; sandy loam
A2—23 to 37 inches; sandy loam
C1—37 to 50 inches; sandy loam

C2—50 to 54 inches; loamy coarse sand
C3—54 to 80 inches; coarse sand

Minor Components in Map Unit 425

Almendra and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Charger and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Redsluff and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

Soils that have a water table at a depth of 40 to 80 inches
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Areas along stream channels on alluvial fans
Hydric soil status: Not hydric

Xerofluvents and similar soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

426—Vina loam, 0 to 1 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Orchard crops and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 160 to 205 feet (49 to 63 meters)
Mean annual precipitation: 22 to 24 inches (559 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 255 days

Map Unit Composition

Vina loam—85 percent
Minor components—15 percent

Characteristics of Vina Loam

Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Parent material: Coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks

Observed vegetation: Almond and walnut orchards and valley oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 1
Land capability, nonirrigated: 3c-1
Storie index: 93 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Ap—0 to 4 inches; loam
A1—4 to 15 inches; loam
A2—15 to 28 inches; loam
A3—28 to 44 inches; loam
A4—44 to 63 inches; loam
Bw—63 to 72 inches; loam

Minor Components in Map Unit 426

Vina fine sandy loam and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Almendra and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Conejo clay loam and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Charger and similar soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Ignord and similar soils
Composition: 1 percent
Slope: 0 to 1 percent

Geomorphic position: Wave-worked distal alluvial fans
Hydric soil status: Not hydric

439—Oxyaquic Xerofluvents clay, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Southwestern Butte County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 45 to 60 feet (15 to 19 meters)
Mean annual precipitation: 18 inches (457 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Oxyaquic Xerofluvents clay—85 percent
Minor components—15 percent

Characteristics of Oxyaquic Xerofluvents Clay

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Silty and clayey alluvium generated from hydraulic mines and derived from sedimentary rocks over clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice, annual grasses and forbs, tules, willows, cottonwood, and scattered valley oak
Surface feature: The natural soil surface has been buried by hydraulic-mine sediment.
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (abrupt textural change): 24 to 80 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Hydrology has been altered by a drainage canal constructed to protect farmland and to carry hydraulic-mine sediment from the Cherokee Gold Mine.
- *Annual flooding frequency:* Frequent
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 18 to 80 inches
- *Available water capacity:* High (about 8.7 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* Low

Interpretive groups
- *Land capability, irrigated:* 5w-2
- *Land capability, nonirrigated:* 5w-2
- *Storie index:* 24 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* D

Typical profile
- Ap—0 to 10 inches; clay

C1—10 to 13 inches; silty clay
C2—13 to 21 inches; silty clay
C3—21 to 27 inches; silt loam
C4—27 to 32 inches; silty clay
C5—32 to 37 inches; silty clay loam
Ab—37 to 55 inches; clay
Bssb—55 to 63 inches; clay
Bqmb—63 to 65 inches; duripan
Bqb—65 to 80 inches; clay

Minor Components in Map Unit 439

Clear Lake clay, frequently flooded, and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Oxyaquic Xerofluvents, fine-loamy, and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Oxyaquic Xerofluvents, fine-silty, and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that have overwash less than 20 inches thick
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that are less than 40 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that are less than 40 inches deep to buried basin clay
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

440—Oxyaquic Xerofluvents silt loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

General location: Southwestern and central Butte County
Major uses: Wildlife habitat, borrow pits, and flood retention
Major land resource area: 17
Landscape: Sacramento Valley

Elevation: 65 to 100 feet (20 to 31 meters)
Mean annual precipitation: 18 to 20 inches (457 to 508 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Oxyaquic Xerofluvents silt loam, frequently flooded—80 percent
Minor components—20 percent

Characteristics of Oxyaquic Xerofluvents Silt Loam, Frequently Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood plains within levees on flood basins and stream terraces
Parent material: Fine-loamy alluvium generated from hydraulic mines and derived from sedimentary rocks over clayey alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Willows, cottonwood, valley oak, and annual grasses and forbs
Surface feature: Hydraulic-mine sediment deposited within the confines of artificial levees
Texture of the surface layer: Stratified silt loam to very fine sandy loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (abrupt textural change): 24 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Hydrology has been altered by a drainage canal constructed to protect farmland and to carry hydraulic-mine sediment from the Cherokee Gold Mine.
- *Annual flooding frequency:* Frequent
- *Annual ponding frequency:* Rare
- *Depth to a water table (zone of saturation):* 24 to 80 inches
- *Available water capacity:* High (about 8.4 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* Very low

Interpretive groups
- *Land capability, irrigated:* 4w-2
- *Land capability, nonirrigated:* 4w-2
- *Storie index:* 58 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* C

Typical profile
- A—0 to 9 inches; stratified silt loam to very fine sandy loam
- C1—9 to 18 inches; fine sand
- C2—18 to 25 inches; stratified silt loam to very fine sandy loam
- C3—25 to 33 inches; stratified silt loam to fine sand
- C4—33 to 44 inches; stratified silty clay loam to loam
- C5—44 to 51 inches; stratified silt loam to silty clay loam
- 2Bssb—51 to 60 inches; clay

Minor Components in Map Unit 440

Clear Lake, overwash, and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Esquon, overwash, and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Typic Xerofluvents and similar soils
Composition: 4 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains
Hydric soil status: Hydric

Riverwash
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Channels
Hydric soil status: Hydric

Soils that are less than 10 inches deep to a duripan
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Channels
Hydric soil status: Hydric

441—Oxyaquic Xerofluvents very fine sandy loam, 0 to 1 percent slopes

Map Unit Setting

General location: Southwestern Butte County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 110 to 120 feet (35 to 38 meters)
Mean annual precipitation: 21 inches (533 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 245 days

Map Unit Composition

Oxyaquic Xerofluvents very fine sandy loam—90 percent
Minor components—10 percent

Characteristics of Oxyaquic Xerofluvents Very Fine Sandy Loam

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Fine-loamy alluvium generated from hydraulic mines and derived from sedimentary rocks over clayey alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice
Surface feature: The natural soil surface has been buried by hydraulic-mine sediment.
Texture of the surface layer: Very fine sandy loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (abrupt textural change): 24 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Levees and leveling for agriculture have altered the hydrology, modifying the frequency and duration of saturation, ponding, and flooding.
Annual flooding frequency: Rare
Annual ponding frequency: Rare
Depth to a water table (zone of saturation): 24 to 80 inches
Available water capacity: Very high (about 10.2 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 3w-2
Land capability, nonirrigated: 3w-2
Storie index: 70 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap—0 to 6 inches; very fine sandy loam
C1—6 to 20 inches; silt loam
C2—20 to 30 inches; silt loam
C3—30 to 43 inches; stratified loamy fine sand to silt loam
C4—43 to 55 inches; silt loam
C5—55 to 72 inches; stratified loamy fine sand to silt loam
2Ab—72 to 75 inches; clay

Minor Components in Map Unit 441

Blavo clay and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Esquon, overwash, and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Oxyaquic Xerofluvents, fine, and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Not hydric

Soils that are less than 40 inches deep to buried basin clay
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Not hydric

Human-transported fill from dredged materials
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Not hydric

Soils that are less than 40 inches deep to a duripan
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Not hydric

442—Durixerolls-Haploxerolls clay loams, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Irrigated crops, pasture, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 140 to 190 feet (43 to 58 meters)
Mean annual precipitation: 22 to 24 inches (559 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 250 days

Map Unit Composition

Durixerolls clay loam—55 percent
Haploxerolls clay loam, deep—30 percent
Minor components—15 percent

Characteristics of Durixerolls Clay Loam

Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Parent material: Fine-loamy alluvium over cemented, loamy alluvium derived from volcanic rocks
Observed vegetation: Almond and prune orchards, wheat, hay, beans, and valley oak
Surface feature: Most areas have been leveled for agriculture.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: Occasional
Depth to a water table (zone of saturation): 12 to 40 inches
Available water capacity: Moderate (about 6.6 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 45 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap—0 to 6 inches; clay loam
Bw1—6 to 12 inches; clay loam

Bw2—12 to 24 inches; clay loam
Bw3—24 to 33 inches; clay loam
2Bqm—33 inches; duripan

Characteristics of Haploxerolls Clay Loam, Deep

Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Parent material: Fine-loamy alluvium over cemented, loamy alluvium derived from volcanic rocks
Observed vegetation: Almond and prune orchards, wheat, hay, beans, and valley oak
Surface feature: Most areas have been leveled for agriculture.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Depth to a water table (zone of saturation): 20 to 60 inches
Available water capacity: Very high (about 10.4 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3s-2
Land capability, nonirrigated: 3s-2
Storie index: 76 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap—0 to 5 inches; clay loam
Bw1—5 to 18 inches; clay loam
Bw2—18 to 29 inches; loam
Bw3—29 to 44 inches; loam
Bw4—44 to 57 inches; loam
2Bqm—57 inches; duripan

Minor Components in Map Unit 442

Haploxerolls loam, 40 to 60 inches deep, and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Almendra loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Anita clay and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Small basins on fan terraces
Hydric soil status: Hydric

Bosquejo clay and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Interfan basins
Hydric soil status: Not hydric

Conejo clay loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Galt clay loam and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Small basins on fan terraces
Hydric soil status: Hydric

Loamy soils that are 0 to 20 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

443—Durixerolls-Haploxerolls loams, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Irrigated crops, pasture, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 140 to 190 feet (44 to 58 meters)
Mean annual precipitation: 22 to 24 inches (559 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 250 days

Map Unit Composition

Durixerolls loam—60 percent
Haploxerolls loam, deep—25 percent
Minor components—15 percent

Characteristics of Durixerolls Loam

Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Parent material: Fine-loamy alluvium over cemented, loamy alluvium derived from volcanic rocks
Observed vegetation: Almond, walnut, and prune orchards, wheat, beans, and valley oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Depth to a water table (zone of saturation): 12 to 40 inches
Available water capacity: Low (about 4.5 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 40 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap—0 to 4 inches; loam
Bw1—4 to 10 inches; loam
Bw2—10 to 17 inches; loam
Bw3—17 to 23 inches; loam
Bw4—23 to 26 inches; loam
2Bqm—26 inches; duripan

Characteristics of Haploxerolls Loam, Deep

Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Parent material: Fine-loamy alluvium over cemented, loamy alluvium derived from volcanic rocks
Observed vegetation: Almond, walnut, and prune orchards, wheat, beans, and valley oak
Surface feature: Most areas have been leveled for agriculture.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Depth to a water table (zone of saturation): 20 to 60 inches
Available water capacity: High (about 8.7 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3s-2
Land capability, nonirrigated: 3s-2
Storie index: 84 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap1—0 to 5 inches; loam
Ap2—5 to 16 inches; loam
Bw1—16 to 27 inches; loam
Bw2—27 to 40 inches; loam
Bw3—40 to 48 inches; loam

Bw4—48 to 52 inches; sandy loam
2Bqm—52 inches; duripan

Minor Components in Map Unit 443

Haploxerolls clay loam and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Galt clay loam and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Small basins on fan terraces
Hydric soil status: Hydric

Busacca clay loam and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to a duripan
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

Altered soils that have been ripped or consist of fill
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

445—Chico loam, 0 to 1 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Orchard crops, row crops, pasture, and residential, commercial, and industrial development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 140 to 225 feet (43 to 69 meters)
Mean annual precipitation: 22 to 24 inches (559 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 255 days

Map Unit Composition

Chico loam—85 percent
Minor components—15 percent

Characteristics of Chico Loam

Slope: 0 to 2 percent
Geomorphic position: Low fan terraces

Parent material: Loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Almond and walnut orchards, annual grasses and forbs, and valley oak
Surface feature: The surface has been leveled for agriculture.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 72 to 80 inches
Available water capacity: Very high (about 11.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Negligible

Interpretive groups
Land capability, irrigated: 1
Land capability, nonirrigated: 3c-1
Storie index: 94 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Ap—0 to 5 inches; loam
Bt1—5 to 10 inches; clay loam
Bt2—10 to 21 inches; clay loam
Bt3—21 to 32 inches; clay loam
Bt4—32 to 50 inches; loam
Bt5—50 to 70 inches; loam
Bt6—70 to 80 inches; loam

Minor Components in Map Unit 445

Redsluff and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Low fan terraces
Hydric soil status: Not hydric

Almendra and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Conejo clay loam and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Vina fine sandy loam and similar soils
Composition: 2 percent
Slope: 0 to 2 percent

Geomorphic position: Inset fans
Hydric soil status: Not hydric

447—Charger fine sandy loam, 0 to 1 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Homesite development, irrigated crops, livestock grazing, riparian forest, wildlife habitat, and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 180 to 600 feet (56 to 183 meters)
Mean annual precipitation: 24 to 28 inches (610 to 711 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Charger fine sandy loam—80 percent
Minor components—20 percent

Characteristics of Charger Fine Sandy Loam

Slope: 0 to 2 percent
Geomorphic position: Proximal alluvial fans
Parent material: Coarse-loamy alluvium derived from igneous, metamorphic, and sedimentary rocks over gravelly alluvium derived from volcanic and metamorphic rocks
Observed vegetation: Walnut and almond orchards, cottonwood, willows, valley oak, and annual grasses and forbs
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 15 percent medium, rounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* Rare
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 40 to 80 inches
- *Available water capacity:* Moderate (about 7.2 inches)
- *Natural drainage class:* Moderately well drained
- *Surface runoff (bare conditions):* Very low

Interpretive groups
- *Land capability, irrigated:* 2s-11
- *Land capability, nonirrigated:* 3s-11
- *Storie index:* 84 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Ap—0 to 3 inches; fine sandy loam
- A1—3 to 7 inches; fine sandy loam
- A2—7 to 15 inches; fine sandy loam
- Bw1—15 to 32 inches; sandy loam
- Bw2—32 to 42 inches; sandy loam

Bw3—42 to 53 inches; sandy loam
Bw4—53 to 63 inches; sandy loam
C—63 to 80 inches; extremely gravelly loamy coarse sand

Minor Components in Map Unit 447

Vina fine sandy loam and similar soils
Composition: 8 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Redsluff and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Low fan terraces
Hydric soil status: Not hydric

Almendra and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Loamy-skeletal soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Proximal alluvial fans
Hydric soil status: Not hydric

Sandy-skeletal soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Proximal alluvial fans
Hydric soil status: Not hydric

Wafap and similar soils
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Low stream terraces
Hydric soil status: Not hydric

448—Haploxerolls clay loam, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Irrigated crops, pasture, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 140 to 190 feet (43 to 59 meters)
Mean annual precipitation: 22 to 24 inches (559 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 255 days

Map Unit Composition

Haploxerolls clay loam—75 percent
Minor components—25 percent

Characteristics of Haploxerolls Clay Loam

Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Parent material: Fine-loamy alluvium derived from volcanic rocks
Observed vegetation: Almond, walnut, and prune orchards, sugar beets, alfalfa, beans, and valley oak
Surface feature: Most areas have been leveled for agriculture.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (dense material): 60 to 80 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Depth to a water table (zone of saturation): 40 to 80 inches
Available water capacity: Very high (about 11.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3s-3
Land capability, nonirrigated: 2s-3
Storie index: 76 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap1—0 to 5 inches; clay loam
Ap2—5 to 10 inches; clay loam
Bw1—10 to 24 inches; clay loam
Bw2—24 to 39 inches; clay loam
Bw3—39 to 66 inches; loam

Minor Components in Map Unit 448

Haploxerolls loam and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Busacca clay and similar soils
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to a duripan or volcanic sediments
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to a gravelly substratum
Composition: 4 percent
Slope: 0 to 2 percent

Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Soils that are less than 20 inches deep to a duripan
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

Clayey soils that are 40 to 60 inches deep to a duripan
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Basins on alluvial fans
Hydric soil status: Not hydric

449—Haploxerolls loam, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Irrigated crops, pasture, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 150 to 200 feet (46 to 61 meters)
Mean annual precipitation: 22 to 24 inches (559 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 255 days

Map Unit Composition

Haploxerolls loam—75 percent
Minor components—25 percent

Characteristics of Haploxerolls Loam

Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Parent material: Fine-loamy alluvium derived from volcanic rocks
Observed vegetation: Almond, walnut, and prune orchards, sugar beets, alfalfa, beans, and valley oak
Surface feature: Most areas have been leveled for agriculture.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (dense material): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Depth to a water table (zone of saturation): 40 to 80 inches
Available water capacity: High (about 9.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 3s-3
Land capability, nonirrigated: 2s-3
Storie index: 84 (revised)

Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap1—0 to 4 inches; loam
Ap2—4 to 10 inches; loam
Bw1—10 to 24 inches; loam
Bw2—24 to 36 inches; loam
Bw3—36 to 52 inches; loam
C—52 to 60 inches; sandy loam

Minor Components in Map Unit 449

Soils that are 20 to 60 inches deep to a duripan or volcanic sediments
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Soils that are less than 20 inches deep to a duripan
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

Soils that are more than 34 inches deep to an extremely gravelly substratum
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Redsluff gravelly loam and similar soils
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Low fan terraces
Hydric soil status: Not hydric

Haploxerolls clay loam and similar soils
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Busacca clay loam and similar soils
Composition: 4 percent
Slope: 0 to 2 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

500—Lofgren-Blavo complex, 0 to 1 percent slopes

Map Unit Setting

General location: Southwestern Butte County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 55 to 110 feet (18 to 34 meters)

Mean annual precipitation: 18 to 20 inches (457 to 508 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Lofgren clay—45 percent
Blavo clay—40 percent
Minor components—15 percent

Characteristics of Lofgren Clay

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* Rare
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 0 to 60 inches
- *Available water capacity:* Moderate (about 6.7 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 5w-2
- *Land capability, nonirrigated:* 5w-2
- *Storie index:* 17 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* D

Typical profile
- Ap—0 to 5 inches; clay
- Bssg1—5 to 12 inches; clay
- Bssg2—12 to 29 inches; clay
- Bkssg—29 to 38 inches; clay
- Bkg—38 to 44 inches; clay
- 2Bkq—44 to 47 inches; clay loam
- 2Bkqm1—47 to 62 inches; duripan
- 2Bkqm2—62 to 82 inches; duripan

Characteristics of Blavo Clay

Slope: 0 to 1 percent
Geomorphic position: Flood basins

Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Rare
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 36 inches
Available water capacity: Moderate (about 5.3 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 7 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
Ap—0 to 5 inches; clay
Bssg1—5 to 16 inches; clay
Bssg2—16 to 24 inches; clay
Bkssg—24 to 30 inches; clay
Bkg—30 to 36 inches; clay loam
2Bkqm—36 to 60 inches; duripan

Minor Components in Map Unit 500

Edjobe clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that are 10 to 20 inches deep to a duripan
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Leveled terraces
Hydric soil status: Hydric

Soils that formed in fill
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Filled sloughs on flood basins
Hydric soil status: Hydric

501—Lofgren-Blavo complex, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: Southwestern Butte County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 55 to 95 feet (18 to 30 meters)
Mean annual precipitation: 18 to 20 inches (457 to 508 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 240 to 245 days

Map Unit Composition

Lofgren clay, occasionally flooded—45 percent
Blavo clay, occasionally flooded—40 percent
Minor components—15 percent

Characteristics of Lofgren Clay, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* Occasional
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 0 to 60 inches
- *Available water capacity:* Moderate (about 6.4 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 5w-2
- *Land capability, nonirrigated:* 5w-2
- *Storie index:* 17 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* D

Typical profile
- Ap1—0 to 5 inches; clay
- Ap2—5 to 12 inches; clay
- Bssg—12 to 22 inches; clay

Bkssg1—22 to 30 inches; clay
Bkssg2—30 to 41 inches; clay
Bk—41 to 45 inches; clay loam
2Bkqm—45 to 60 inches; duripan

Characteristics of Blavo Clay, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Occasional
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Moderate (about 5.3 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 7 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
Ap1—0 to 6 inches; clay
Ap2—6 to 10 inches; clay
Bssg—10 to 22 inches; clay
Bkssg—22 to 29 inches; clay
Bkg—29 to 36 inches; clay loam
2Bkqm—36 to 42 inches; duripan

Minor Components in Map Unit 501

Clear Lake clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that formed in fill
Composition: 5 percent
Slope: 0 to 1 percent

Geomorphic position: Filled sloughs on flood basins
Hydric soil status: Hydric

Soils that are 10 to 20 inches deep to a duripan
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Leveled terraces
Hydric soil status: Hydric

502—Blavo silt loam, 0 to 1 percent slopes, overwash, occasionally flooded

Map Unit Setting

General location: Southwestern Butte County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 75 to 95 feet (24 to 29 meters)
Mean annual precipitation: 19 inches (483 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 240 days

Map Unit Composition

Blavo silt loam, overwash, occasionally flooded—80 percent
Minor components—20 percent

Characteristics of Blavo Silt Loam, Overwash, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Silty alluvium over clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.
Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Occasional
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 36 inches
Available water capacity: Moderate (about 5.4 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2

Land capability, nonirrigated: 5w-2
Storie index: 14 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
Ap—0 to 7 inches; silt loam
Bssgb1—7 to 14 inches; clay
Bssgb2—14 to 22 inches; clay
Bssgb3—22 to 29 inches; clay
Bkgb—29 to 36 inches; clay
2Bkqmb—36 to 50 inches; duripan

Minor Components in Map Unit 502

Blavo clay, occasionally flooded, and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Columbia taxadjunct very fine sandy loam and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Channels
Hydric soil status: Hydric

Lofgren clay, occasionally flooded, and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Lofgren silt loam, overwash, and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Columbia sand and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Channels
Hydric soil status: Hydric

519—Edjobe silty clay, 0 to 1 percent slopes

Map Unit Setting

General location: West-central Butte County
Major uses: Grain crops, row crops, and orchard crops
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 110 to 150 feet (35 to 46 meters)
Mean annual precipitation: 20 to 22 inches (508 to 559 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Edjobe silty clay—85 percent
Minor components—15 percent

Characteristics of Edjobe Silty Clay

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice, prune orchards, almond orchards, and annual grasses and forbs
Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.
Texture of the surface layer: Silty clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 60 to 80 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* None
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 10 to 80 inches
- *Available water capacity:* Very high (about 10.0 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 5w-2
- *Land capability, nonirrigated:* 5w-2
- *Storie index:* 29 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* D

Typical profile
- Ap—0 to 8 inches; silty clay
- Bssg—8 to 25 inches; silty clay
- Bkssg—25 to 32 inches; silty clay
- Bw1—32 to 48 inches; silty clay loam
- 2Bw2—48 to 60 inches; clay loam
- 2Bq—60 to 69 inches; clay loam
- 2Bkqm—69 to 75 inches; duripan

Minor Components in Map Unit 519

Busacca and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Conejo clay loam and similar soils
Composition: 5 percent

Slope: 0 to 1 percent
Geomorphic position: Distal alluvial fans
Hydric soil status: Not hydric

Esquon silty clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

520—Esquon-Neerdobe complex, 0 to 1 percent slopes

Map Unit Setting

General location: Southwestern Butte County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 55 to 170 feet (17 to 52 meters)
Mean annual precipitation: 18 to 25 inches (457 to 635 millimeters)
Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)
Frost-free period: 240 to 250 days

Map Unit Composition

Esquon clay—60 percent
Neerdobe clay—30 percent
Minor components—10 percent

Characteristics of Esquon Clay

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* Rare
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 0 to 60 inches
- *Available water capacity:* High (about 8.9 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 5w-2

Land capability, nonirrigated: 5w-2
Storie index: 24 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
Ap—0 to 5 inches; clay
Bssg—5 to 11 inches; clay
Bss1—11 to 22 inches; clay
Bss2—22 to 35 inches; clay
Bkss1—35 to 46 inches; clay
Bkss2—46 to 50 inches; silty clay
Bk—50 to 56 inches; silty clay
2Bkqm—56 to 67 inches; duripan

Characteristics of Neerdobe Clay

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Rare
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Moderate (about 5.8 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 10 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 5 inches; clay
Bssg1—5 to 15 inches; clay
Bssg2—15 to 23 inches; clay
Bssg3—23 to 28 inches; clay
Bk—28 to 33 inches; clay
2Bkq—33 to 38 inches; loam
2Bkqm—38 to 56 inches; duripan

Minor Components in Map Unit 520

Lofgren clay and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Eastbiggs and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Terraces
Hydric soil status: Hydric

Soils that formed in fill and do not have a duripan
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Filled sloughs on flood basins
Hydric soil status: Hydric

Urban land
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins

Esquon loamy sand to silty clay, overwash, and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

521—Neerdobe silt loam, 0 to 1 percent slopes, overwash

Map Unit Setting

General location: Central Butte County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 100 to 150 feet (32 to 47 meters)
Mean annual precipitation: 21 to 24 inches (533 to 610 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 days

Map Unit Composition

Neerdobe silt loam, overwash—85 percent
Minor components—15 percent

Characteristics of Neerdobe Silt Loam, Overwash

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Flood-deposited, silty alluvium over clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice and annual grasses and forbs
Surface features: Overwash originating from the Cherokee Gold Mine consists of silt loam and loamy very fine sand that have buried the natural surface layer of clay. The surface has been leveled for agriculture.

Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 60 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Rare
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 60 inches
Available water capacity: Moderate (about 7.4 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 24 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
Ap—0 to 7 inches; silt loam
C1—7 to 16 inches; silt loam
C2—16 to 20 inches; loamy very fine sand
Ab—20 to 33 inches; clay
Bssb—33 to 47 inches; clay
2Bkqmb—47 to 52 inches; cemented, very gravelly duripan
2Bkqb—52 to 60 inches; duripan

Minor Components in Map Unit 521

Oxyaquic Xerofluvents, loamy overwash, and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Esquon clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Neerdobe clay and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

522—Clear Lake silty clay loam, 0 to 1 percent slopes, overwash, frequently flooded

Map Unit Setting

General location: Southwestern Butte County
Major uses: Hunting and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 55 feet (17 meters)
Mean annual precipitation: 18 inches (457 millimeters)
Mean annual air temperature: 59 degrees F (15 degrees C)
Frost-free period: 240 days

Map Unit Composition

Clear Lake silty clay loam, overwash—80 percent
Minor components—15 percent

Characteristics of Clear Lake Silty Clay Loam, Overwash

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Flood-deposited, silty alluvium over silty and clayey alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Tules, swamp timothy, smartweed, sourdock, spike rush, bulrush, arnica ssp., willows, cottonwood, bermudagrass, and cattails
Surface feature: The surface layer of silty clay loam is flood-deposited overwash 5 to 20 inches thick.
Texture of the surface layer: Silty clay loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* Frequent
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 0 to 80 inches
- *Available water capacity:* High (about 9.7 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 5w-2
- *Land capability, nonirrigated:* 5w-2
- *Storie index:* 31 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* D

Typical profile
A—0 to 6 inches; silty clay loam
Akb—6 to 12 inches; silty clay
Bkssb1—12 to 35 inches; silty clay
Bkssb2—35 to 50 inches; silty clay
Bkgb1—50 to 60 inches; silty clay
Bkgb2—60 to 70 inches; silty clay
Bkgb3—70 to 72 inches; silty clay

Minor Components in Map Unit 522

Oxyaquic Xerofluvents silty clay loam and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Esquon silty clay loam, overwash, and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Wet soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Intermittent ponds, channels, and sloughs on flood basins
Hydric soil status: Hydric

Soils that are more than 60 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Saturated soils that are not subject to cracking
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

523—Esquon silty clay loam, 0 to 1 percent slopes, overwash, frequently flooded

Map Unit Setting

General location: Southwestern Butte County and northwestern Sutter County
Major uses: Hunting and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 55 feet (17 meters)
Mean annual precipitation: 18 inches (457 millimeters)
Mean annual air temperature: 59 degrees F (15 degrees C)
Frost-free period: 240 days

Map Unit Composition

Esquon silty clay loam, overwash—80 percent
Minor components—20 percent

Characteristics of Esquon Silty Clay Loam, Overwash

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Flood-deposited, silty alluvium over silty and clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Cocklebur, spikerush, curly dock, bulrush, willows, bermudagrass, cottonwood, and tules
Surface features: Flood-deposited overwash is 6 to 12 inches thick. In some areas alteration of the surface has improved the habitat for wetland wildlife.
Texture of the surface layer: Silty clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* Frequent
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 0 to 60 inches
- *Available water capacity:* High (about 7.7 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 5w-2
- *Land capability, nonirrigated:* 5w-2
- *Storie index:* 47 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* D

Typical profile
- A—0 to 10 inches; silty clay loam
- Ab—10 to 18 inches; silty clay
- Bkssb—18 to 46 inches; silty clay
- Bkqmb—46 to 60 inches; duripan

Minor Components in Map Unit 523

Wet soils
Composition: 6 percent
Slope: 0 percent
Geomorphic position: Intermittent ponds, channels, and sloughs on flood basins
Hydric soil status: Hydric

Neerdobe silty clay loam or clay loam, overwash, and similar soils
Composition: 4 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Oxyaquic Xerofluvents and similar soils
Composition: 4 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Esquon silt loam, overwash, and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Soils that are more than 60 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Saturated soils that are not subject to cracking
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

525—Govstanford loam, 0 to 1 percent slopes

Map Unit Setting

General location: West-central Butte County
Major uses: Homesite development, orchard crops, and pasture
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 120 to 160 feet (38 to 49 meters)
Mean annual precipitation: 22 to 23 inches (559 to 584 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 250 days

Map Unit Composition

Govstanford loam—85 percent
Minor components—15 percent

Characteristics of Govstanford Loam

Slope: 0 to 1 percent
Geomorphic position: Alluvial fans above flood basins
Parent material: Coarse-loamy alluvium generated from hydraulic mines and derived from igneous and metamorphic rocks over clayey alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Almond, walnut, and prune orchards, pasture, and valley oak
Surface feature: The surface has been leveled for agriculture.
Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (abrupt textural change): 20 to 36 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: The hydrology has been changed by the construction of levees.
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 20 to 72 inches
Available water capacity: Moderate (about 5.5 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 3s-3
Land capability, nonirrigated: 3s-3
Storie index: 52 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Ap1—0 to 3 inches; loam
Ap2—3 to 11 inches; loam
C1—11 to 18 inches; sandy loam
C2—18 to 25 inches; silt loam
C3—25 to 34 inches; silt loam
2Assg—34 to 42 inches; clay
2Bssg1—42 to 61 inches; silty clay
2Bssg2—61 to 72 inches; silty clay

Minor Components in Map Unit 525

Soils that have overwash less than 20 inches thick
Composition: 8 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans above flood basins
Hydric soil status: Not hydric

Typic Xerofluvents, coarse-loamy, and similar soils
Composition: 4 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans above flood basins
Hydric soil status: Not hydric

Edjobe silty clay and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Gravelly soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

526—Govstanford loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

General location: West-central Butte County
Major uses: Orchard crops, row crops, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 110 to 140 feet (34 to 44 meters)
Mean annual precipitation: 20 to 23 inches (508 to 584 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 245 to 250 days

Map Unit Composition

Govstanford loam, occasionally flooded—85 percent
Minor components—15 percent

Characteristics of Govstanford Loam, Occasionally Flooded

Slope: 0 to 1 percent
Geomorphic position: Flood plains above flood basins
Parent material: Coarse-loamy alluvium generated from hydraulic mines and derived from igneous and metamorphic rocks over clayey alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Almond, walnut, and prune orchards and riparian forest
Surface feature: The surface has been leveled for agriculture.
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (abrupt textural change): 20 to 36 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* The hydrology has been changed by the construction of levees.
- *Annual flooding frequency:* Occasional
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 20 to 72 inches
- *Available water capacity:* Moderate (about 5.5 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* Very low

Interpretive groups
- *Land capability, irrigated:* 3w-2
- *Land capability, nonirrigated:* 3w-2
- *Storie index:* 52 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- Ap1—0 to 3 inches; loam
- Ap2—3 to 11 inches; loam
- C1—11 to 18 inches; sandy loam
- C2—18 to 25 inches; silt loam
- C3—25 to 34 inches; silt loam
- 2Assg—34 to 42 inches; clay
- 2Bssg1—42 to 61 inches; silty clay
- 2Bssg2—61 to 72 inches; silty clay

Minor Components in Map Unit 526

Xerofluvents sandy loam, frequently flooded, and similar soils
Composition: 10 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains above flood basins
Hydric soil status: Not hydric

Oxyaquic Xerofluvents sandy loam, frequently flooded, and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains above flood basins
Hydric soil status: Hydric

Edjobe silty clay and similar soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

Gravelly soils
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Flood plains above flood basins
Hydric soil status: Not hydric

528—Neerdobe clay loam, 0 to 1 percent slopes

Map Unit Setting

General location: Southwestern Butte County
Major uses: Cropland
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 85 to 90 feet (26 to 28 meters)
Mean annual precipitation: 20 inches (508 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 245 days

Map Unit Composition

Neerdobe clay loam—90 percent
Minor components—10 percent

Characteristics of Neerdobe Clay Loam

Slope: 0 to 1 percent
Geomorphic position: Flood basins
Parent material: Clayey alluvium over cemented, loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Rice, annual grasses and forbs, and scattered valley oak
Surface features: The surface has been leveled for agriculture. Polygonal cracks open during dry periods.
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Flood-control structures have reduced the frequency and duration of flooding. Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, levees, leveling, and urban construction have modified overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: Rare
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Low (about 4.2 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 13 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 10 inches; clay loam
Bss1—10 to 18 inches; clay
Bss2—18 to 25 inches; clay
2Bqm—25 inches; duripan

Minor Components in Map Unit 528

Gridley clay loam and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Margins of terraces and flood basins
Hydric soil status: Not hydric

Soils that are frequently flooded
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Irrigation ditches and channels on flood basins
Hydric soil status: Hydric

Soils that are 10 to 20 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Flood basins
Hydric soil status: Hydric

550—Dunstone-Loafercreek complex, dry, 1 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County
Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 245 to 1,200 feet (76 to 366 meters)
Mean annual precipitation: 28 to 40 inches (711 to 1,016 millimeters)

Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Dunstone loam, dry—60 percent
Loafercreek silt loam, dry—20 percent
Minor components—20 percent

Characteristics of Dunstone Loam, Dry

Slope: 1 to 15 percent
Geomorphic position: Metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 2.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; loam
BAt—2 to 7 inches; loam
Bt1—7 to 10 inches; loam
Bt2—10 to 16 inches; loam
Cr—16 inches; bedrock

Characteristics of Loafercreek Silt Loam, Dry

Slope: 1 to 15 percent
Geomorphic position: Metavolcanic hills
Parent material: Loamy residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: 0 to 25 percent coarse, subangular gravel
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed

Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A1—0 to 2 inches; silt loam
A2—2 to 4 inches; silt loam
BAt—4 to 11 inches; loam
Bt1—11 to 20 inches; loam
Bt2—20 to 29 inches; loam
Crt—29 inches; bedrock

Minor Components in Map Unit 550

Auburn loam and similar soils
Composition: 9 percent
Slope: 1 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 5 percent
Slope: 1 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Lomarica and similar soils
Composition: 2 percent
Slope: 1 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Clayey soils that are 10 to 20 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 1 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 1 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

551—Dunstone-Lomarica-Argonaut taxadjunct complex, 15 to 30 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County
Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Major land resource area: 18

Landscape: Northern Sierra Nevada foothills
Elevation: 200 to 1,600 feet (61 to 488 meters)
Mean annual precipitation: 28 to 40 inches (711 to 1,016 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Dunstone loam, dry—35 percent
Lomarica loam—15 percent
Argonaut taxadjunct loam—15 percent
Minor components—35 percent

Characteristics of Dunstone Loam, Dry

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 2.8 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Very high

Interpretive groups
- *Land capability, irrigated:* 6e-1
- *Land capability, nonirrigated:* 6e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* D

Typical profile
- A—0 to 2 inches; loam
- BAt—2 to 7 inches; loam
- Bt1—7 to 10 inches; loam
- Bt2—10 to 16 inches; loam
- Cr—16 inches; bedrock

Characteristics of Lomarica Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Parent material: Clayey colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 2 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-4
Land capability, nonirrigated: 4e-4
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 1 inch; loam
BAt—1 to 5 inches; loam
Bt1—5 to 9 inches; clay loam
Bt2—9 to 12 inches; clay loam
2Bt3—12 to 25 inches; extremely gravelly clay loam
2Btss—25 to 32 inches; extremely gravelly clay
2Cr—32 inches; bedrock

Characteristics of Argonaut Taxadjunct Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Parent material: Clayey colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subangular gravel, 0 to 5 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-4
Land capability, nonirrigated: 4e-4
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; loam
Bt1—2 to 8 inches; clay loam
Bt2—8 to 14 inches; clay
Bt3—14 to 20 inches; clay
BCt1—20 to 26 inches; clay
BCt2—26 to 30 inches; clay loam
Cr—30 inches; bedrock

Minor Components in Map Unit 551

Loafercreek and similar soils
Composition: 8 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Katskillhill and similar soils
Composition: 8 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Auburn loam and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Clayey-skeletal soils that are more than 40 inches deep to paralithic bedrock
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Clayey-skeletal soils that are less than 20 inches deep to paralithic bedrock
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

552—Dunstone-Loafercreek complex, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, homesite development, watershed, and recreation
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 245 to 1,200 feet (76 to 366 meters)
Mean annual precipitation: 29 to 40 inches (737 to 1,016 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Dunstone gravelly loam—45 percent
Loafercreek gravelly loam—40 percent
Minor components—15 percent

Characteristics of Dunstone Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders
Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A1—0 to 4 inches; gravelly loam
A2—4 to 6 inches; gravelly loam
Bt1—6 to 10 inches; gravelly loam
Bt2—10 to 15 inches; very gravelly loam
Crt—15 to 37 inches; bedrock
R—37 inches; bedrock

Characteristics of Loafercreek Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Parent material: Loamy residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 25 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.2 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-4
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 2 inches; gravelly loam
BAt—2 to 6 inches; gravelly loam
Bt1—6 to 12 inches; loam
Bt2—12 to 23 inches; gravelly loam
Bt3—23 to 31 inches; gravelly silt loam
Crt—31 to 42 inches; bedrock
R—42 inches; bedrock

Minor Components in Map Unit 552

Rock outcrop
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy soils that are less than 20 inches deep to lithic bedrock
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

Mounthope and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to lithic bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

Soils in areas where the surface has been altered by leveling
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

553—Dunstone-Loafercreek complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, watershed, homesite development, and recreation
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 245 to 1,200 feet (76 to 366 meters)
Mean annual precipitation: 29 to 40 inches (737 to 1,016 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Dunstone gravelly loam—45 percent
Loafercreek gravelly loam—40 percent
Minor components—15 percent

Characteristics of Dunstone Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Parent material: Loamy colluvium derived from metavolcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders
Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A1—0 to 4 inches; gravelly loam
A2—4 to 6 inches; gravelly loam
Bt1—6 to 10 inches; gravelly loam
Bt2—10 to 15 inches; very gravelly loam
Crt—15 to 37 inches; bedrock
R—37 inches; bedrock

Characteristics of Loafercreek Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 25 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 2 inches; gravelly loam
BAt—2 to 6 inches; gravelly loam
Bt1—6 to 12 inches; loam
Bt2—12 to 23 inches; gravelly loam
Bt3—23 to 31 inches; gravelly silt loam
Crt—31 to 42 inches; bedrock
R—42 inches; bedrock

Minor Components in Map Unit 553

Rock outcrop
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to lithic bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Mounthope and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to lithic bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Soils in areas where the surface has been altered by leveling
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

554—Dunstone-Loafercreek complex, 30 to 50 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, watershed, and recreation
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 400 to 1,200 feet (122 to 366 meters)
Mean annual precipitation: 29 to 40 inches (737 to 1,016 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Dunstone gravelly loam—45 percent
Loafercreek gravelly loam—40 percent
Minor components—15 percent

Characteristics of Dunstone Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Parent material: Loamy residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders
Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A1—0 to 4 inches; gravelly loam
A2—4 to 6 inches; gravelly loam
Bt1—6 to 10 inches; gravelly loam
Bt2—10 to 15 inches; very gravelly loam
Crt—15 to 37 inches; bedrock
R—37 inches; bedrock

Characteristics of Loafercreek Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Parent material: Loamy residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 25 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 2 inches; gravelly loam
BAt—2 to 6 inches; gravelly loam
Bt1—6 to 12 inches; loam
Bt2—12 to 23 inches; gravelly loam
Bt3—23 to 31 inches; gravelly silt loam

Crt—31 to 42 inches; bedrock
R—42 inches; bedrock

Minor Components in Map Unit 554

Rock outcrop
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to lithic bedrock
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Mounthope and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to lithic bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

555—Dunstone-Loafercreek complex, 50 to 90 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, watershed, and recreation
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 400 to 1,200 feet (122 to 366 meters)
Mean annual precipitation: 29 to 40 inches (737 to 1,016 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Dunstone gravelly loam—45 percent
Loafercreek gravelly loam—40 percent
Minor components—15 percent

Characteristics of Dunstone Gravelly Loam

Slope: 50 to 90 percent
Geomorphic position: Backslopes on metavolcanic hills

Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders
Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A1—0 to 4 inches; gravelly loam
A2—4 to 6 inches; gravelly loam
Bt1—6 to 10 inches; gravelly loam
Bt2—10 to 15 inches; very gravelly loam
Crt—15 to 37 inches; bedrock
R—37 inches; bedrock

Characteristics of Loafercreek Gravelly Loam

Slope: 50 to 90 percent
Geomorphic position: Backslopes on metavolcanic hills
Parent material: Loamy colluvium derived from metavolcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, toyon, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 25 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8

Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 2 inches; gravelly loam
BAt—2 to 6 inches; gravelly loam
Bt1—6 to 12 inches; loam
Bt2—12 to 23 inches; gravelly loam
Bt3—23 to 31 inches; gravelly silt loam
Crt—31 to 42 inches; bedrock
R—42 inches; bedrock

Minor Components in Map Unit 555

Rock outcrop
Composition: 9 percent
Slope: 50 to 90 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy soils that are less than 10 inches deep to lithic bedrock
Composition: 3 percent
Slope: 50 to 90 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 2 percent
Slope: 50 to 90 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Soils in areas where the surface has been altered by cutting
Composition: 1 percent
Slope: 50 to 90 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

556—Mounthope-Hartsmill complex, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat, watershed, and homesite development
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 1,200 to 2,000 feet (366 to 610 meters)
Mean annual precipitation: 40 to 45 inches (1,016 to 1,143 millimeters)
Mean annual air temperature: 57 to 59 degrees F (14 to 15 degrees C)
Frost-free period: 240 to 260 days

Map Unit Composition

Mounthope loam—50 percent
Hartsmill gravelly loam—40 percent
Minor components—10 percent

Characteristics of Mounthope Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks
Observed vegetation: Blue oak, foothill pine, interior live oak, manzanita, buckbrush, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; loam
Bt1—3 to 7 inches; loam
Bt2—7 to 15 inches; loam
Bt3—15 to 22 inches; gravelly clay loam
Bt4—22 to 26 inches; gravelly clay loam
Bt5—26 to 31 inches; very gravelly clay loam
Bt6—31 to 42 inches; very gravelly clay loam
Bt7—42 to 52 inches; gravelly clay loam
Cr—52 inches; bedrock

Characteristics of Hartsmill Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, manzanita, buckbrush, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed

Available water capacity: Low (about 4.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-7
Land capability, nonirrigated: 3e-7
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 6 inches; very gravelly loam
Bt2—6 to 13 inches; very gravelly loam
Bt3—13 to 24 inches; very gravelly loam
BCt1—24 to 35 inches; very cobbly clay loam
BCt2—35 to 62 inches; extremely cobbly clay loam
Crt—62 inches; bedrock

Minor Components in Map Unit 556

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metavolcanic hills
Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metavolcanic hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metavolcanic hills
Hydric soil status: Not hydric

Soils in areas where the surface has been altered by clearing
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metavolcanic hills
Hydric soil status: Not hydric

Dunstone gravelly loam and similar soils
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metavolcanic hills
Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to paralithic bedrock
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metavolcanic hills
Hydric soil status: Not hydric

557—Mounthope-Hartsmill complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat, watershed, and homesite development
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 1,200 to 2,000 feet (366 to 610 meters)
Mean annual precipitation: 40 to 45 inches (1,016 to 1,143 millimeters)
Mean annual air temperature: 57 to 59 degrees F (14 to 15 degrees C)
Frost-free period: 240 to 260 days

Map Unit Composition

Mounthope loam—50 percent
Hartsmill gravelly loam—40 percent
Minor components—10 percent

Characteristics of Mounthope Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Parent material: Loamy residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Blue oak, foothill pine, interior live oak, manzanita, buckbrush, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 6.7 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 4e-1
- *Land capability, nonirrigated:* 4e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 1 inch; slightly decomposed plant material
- A—1 to 3 inches; loam
- Bt1—3 to 7 inches; loam
- Bt2—7 to 15 inches; loam
- Bt3—15 to 22 inches; gravelly clay loam
- Bt4—22 to 26 inches; gravelly clay loam
- Bt5—26 to 31 inches; very gravelly clay loam

Bt6—31 to 42 inches; very gravelly clay loam
Bt7—42 to 52 inches; gravelly clay loam
Cr—52 inches; bedrock

Characteristics of Hartsmill Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Parent material: Loamy residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, manzanita, buckbrush, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 6 inches; very gravelly loam
Bt2—6 to 13 inches; very gravelly loam
Bt3—13 to 24 inches; very gravelly loam
BCt1—24 to 35 inches; very cobbly clay loam
BCt2—35 to 62 inches; extremely cobbly clay loam
Crt—62 inches; bedrock

Minor Components in Map Unit 557

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 15 to 30 percent

Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Dunstone gravelly loam and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic hills
Hydric soil status: Not hydric

558—Hartsmill-Mounthope complex, 30 to 50 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 1,200 to 2,000 feet (366 to 610 meters)
Mean annual precipitation: 40 to 45 inches (1,016 to 1,143 millimeters)
Mean annual air temperature: 57 to 59 degrees F (14 to 15 degrees C)
Frost-free period: 240 to 260 days

Map Unit Composition

Hartsmill gravelly loam—55 percent
Mounthope loam—30 percent
Minor components—15 percent

Characteristics of Hartsmill Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, manzanita, buckbrush, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 6 inches; very gravelly loam
Bt2—6 to 13 inches; very gravelly loam
Bt3—13 to 24 inches; very gravelly loam
BCt1—24 to 35 inches; very cobbly clay loam
BCt2—35 to 62 inches; extremely cobbly clay loam
Crt—62 inches; bedrock

Characteristics of Mounthope Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Shrubs, live oak, and foothill pine
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; loam
Bt1—3 to 7 inches; loam
Bt2—7 to 15 inches; loam
Bt3—15 to 22 inches; gravelly clay loam
Bt4—22 to 26 inches; gravelly clay loam
Bt5—26 to 31 inches; very gravelly clay loam
Bt6—31 to 42 inches; very gravelly clay loam
Bt7—42 to 52 inches; gravelly clay loam
Cr—52 inches; bedrock

Minor Components in Map Unit 558

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 7 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to paralithic bedrock
Composition: 6 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Dunstone gravelly loam and similar soils
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to paralithic bedrock
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

559—Hartsmill-Mounthope complex, 50 to 70 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 1,200 to 2,000 feet (366 to 610 meters)
Mean annual precipitation: 40 to 45 inches (1,016 to 1,143 millimeters)
Mean annual air temperature: 57 to 59 degrees F (14 to 15 degrees C)
Frost-free period: 240 to 260 days

Map Unit Composition

Hartsmill gravelly loam—55 percent
Mounthope loam—30 percent
Minor components—15 percent

Characteristics of Hartsmill Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic hills
Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, manzanita, buckbrush, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 6 inches; very gravelly loam
Bt2—6 to 13 inches; very gravelly loam
Bt3—13 to 24 inches; very gravelly loam
BCt1—24 to 35 inches; very cobbly clay loam
BCt2—35 to 62 inches; extremely cobbly clay loam
Crt—62 inches; bedrock

Characteristics of Mounthope Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic hills
Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Blue oak, foothill pine, interior live oak, manzanita, buckbrush, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; loam

Bt1—3 to 7 inches; loam
Bt2—7 to 15 inches; loam
Bt3—15 to 22 inches; gravelly clay loam
Bt4—22 to 26 inches; gravelly clay loam
Bt5—26 to 31 inches; very gravelly clay loam
Bt6—31 to 42 inches; very gravelly clay loam
Bt7—42 to 52 inches; gravelly clay loam
Cr—52 inches; bedrock

Minor Components in Map Unit 559

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to paralithic bedrock
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Dunstone gravelly loam and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Fine-loamy soils that are 20 to 40 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

560—Hartsmill-Mounthope complex, 70 to 90 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 1,200 to 2,000 feet (366 to 610 meters)
Mean annual precipitation: 40 to 45 inches (1,016 to 1,143 millimeters)
Mean annual air temperature: 57 to 59 degrees F (14 to 15 degrees C)
Frost-free period: 240 to 260 days

Map Unit Composition

Hartsmill gravelly loam—50 percent
Mounthope loam—30 percent
Minor components—20 percent

Characteristics of Hartsmill Gravelly Loam

Slope: 70 to 90 percent

Geomorphic position: Backslopes on metavolcanic hills
Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, manzanita, buckbrush, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 6 inches; very gravelly loam
Bt2—6 to 13 inches; very gravelly loam
Bt3—13 to 24 inches; very gravelly loam
BCt1—24 to 35 inches; very cobbly clay loam
BCt2—35 to 62 inches; extremely cobbly clay loam
Crt—62 inches; bedrock

Characteristics of Mounthope Loam

Slope: 70 to 90 percent
Geomorphic position: Backslopes on metavolcanic hills
Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Blue oak, foothill pine, interior live oak, manzanita, buckbrush, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; loam
Bt1—3 to 7 inches; loam
Bt2—7 to 15 inches; loam
Bt3—15 to 22 inches; gravelly clay loam
Bt4—22 to 26 inches; gravelly clay loam
Bt5—26 to 31 inches; very gravelly clay loam
Bt6—31 to 42 inches; very gravelly clay loam
Bt7—42 to 52 inches; gravelly clay loam
Cr—52 inches; bedrock

Minor Components in Map Unit 560

Rock outcrop
Composition: 7 percent
Slope: 70 to 90 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Fine-loamy soils that are 10 to 20 inches deep to bedrock
Composition: 6 percent
Slope: 70 to 90 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Dunstone gravelly loam and similar soils
Composition: 4 percent
Slope: 70 to 90 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 3 percent
Slope: 70 to 90 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

561—Bigridge-Minniecreek complex, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat, homesite development, watershed, and limited timber production
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 2,000 to 2,595 feet (610 to 792 meters)
Mean annual precipitation: 45 to 50 inches (1,143 to 1,270 millimeters)

Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 230 to 240 days

Map Unit Composition

Bigridge loam—50 percent
Minniecreek loam—35 percent
Minor components—15 percent

Characteristics of Bigridge Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon
Texture of the surface layer: Moderately decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-7
Land capability, nonirrigated: 3e-7
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 5 inches; loam
BAt—5 to 9 inches; gravelly loam
Bt1—9 to 15 inches; gravelly loam
Bt2—15 to 20 inches; gravelly loam
BCt1—20 to 27 inches; very gravelly loam
BCt2—27 to 36 inches; extremely gravelly loam
BCt3—36 to 51 inches; very gravelly loam
Crt—51 to 62 inches; bedrock

Characteristics of Minniecreek Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 40 percent coarse, angular gravel, 0 to 25 percent angular cobbles, 0 to 15 percent angular stones, 0 to 10 percent angular boulders

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3e-7
Land capability, nonirrigated: 3e-7
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; loam
BAt—2 to 8 inches; loam
Bt1—8 to 15 inches; loam
Bt2—15 to 24 inches; silty clay loam
BCt—24 to 32 inches; silty clay loam
Crt1—32 to 47 inches; bedrock
Crt2—47 to 58 inches; bedrock
Cr—58 to 75 inches; bedrock

Minor Components in Map Unit 561

Rock outcrop
Composition: 5 percent
Slope: 8 to 15 percent
Geomorphic position: Ridgetops on metavolcanic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on metavolcanic hills
Hydric soil status: Not hydric

Hartsmill and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on metavolcanic hills
Hydric soil status: Not hydric

Mounthope and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on metavolcanic hills
Hydric soil status: Not hydric

562—Bigridge-Minniecreek complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat, homesite development, watershed, and limited timber production
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 2,000 to 2,595 feet (610 to 792 meters)
Mean annual precipitation: 45 to 50 inches (1,143 to 1,270 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 230 to 240 days

Map Unit Composition

Bigridge loam—50 percent
Minniecreek loam—35 percent
Minor components—15 percent

Characteristics of Bigridge Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon
Texture of the surface layer: Moderately decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 5 inches; loam
BAt—5 to 9 inches; gravelly loam
Bt1—9 to 15 inches; gravelly loam
Bt2—15 to 20 inches; gravelly loam
BCt1—20 to 27 inches; very gravelly loam
BCt2—27 to 36 inches; extremely gravelly loam
BCt3—36 to 51 inches; very gravelly loam
Crt—51 to 62 inches; bedrock

Characteristics of Minniecreek Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 40 percent coarse, angular gravel, 0 to 25 percent angular cobbles, 0 to 15 percent angular stones, 0 to 10 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; loam
BAt—2 to 8 inches; loam
Bt1—8 to 15 inches; loam
Bt2—15 to 24 inches; silty clay loam
BCt—24 to 32 inches; silty clay loam
Crt1—32 to 47 inches; bedrock
Crt2—47 to 58 inches; bedrock
Cr—58 to 75 inches; bedrock

Minor Components in Map Unit 562

Rock outcrop
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

Hartsmill and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

Mounthope and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic hills
Hydric soil status: Not hydric

563—Bigridge-Minniecreek complex, 30 to 50 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat, watershed, and limited timber production
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 1,800 to 2,595 feet (549 to 792 meters)
Mean annual precipitation: 45 to 50 inches (1,143 to 1,270 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 230 to 240 days

Map Unit Composition

Bigridge loam—50 percent
Minniecreek loam—35 percent
Minor components—15 percent

Characteristics of Bigridge Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon
Texture of the surface layer: Moderately decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 5 inches; loam
BAt—5 to 9 inches; gravelly loam
Bt1—9 to 15 inches; gravelly loam
Bt2—15 to 20 inches; gravelly loam
BCt1—20 to 27 inches; very gravelly loam
BCt2—27 to 36 inches; extremely gravelly loam
BCt3—36 to 51 inches; very gravelly loam
Crt—51 to 62 inches; bedrock

Characteristics of Minniecreek Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 40 percent coarse, angular gravel, 0 to 25 percent angular cobbles, 0 to 15 percent angular stones, 0 to 10 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; loam
BAt—2 to 8 inches; loam
Bt1—8 to 15 inches; loam
Bt2—15 to 24 inches; silty clay loam
BCt—24 to 32 inches; silty clay loam
Crt1—32 to 47 inches; bedrock
Crt2—47 to 58 inches; bedrock
Cr—58 to 75 inches; bedrock

Minor Components in Map Unit 563

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 3 percent
Slope: 30 to 50 percent

Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Hartsmill and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Surnuf taxadjunct and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Concave backslopes on metavolcanic hills

Loamy soils that are 10 to 20 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Mounthope and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

564—Bigridge-Minniecreek complex, 50 to 70 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat, watershed, and limited timber production
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 2,000 to 2,595 feet (610 to 792 meters)
Mean annual precipitation: 45 to 50 inches (1,143 to 1,270 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 230 to 240 days

Map Unit Composition

Bigridge loam—50 percent
Minniecreek loam—35 percent
Minor components—15 percent

Characteristics of Bigridge Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic hills
Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks

Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon
Texture of the surface layer: Moderately decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 5 inches; loam
BAt—5 to 9 inches; gravelly loam
Bt1—9 to 15 inches; gravelly loam
Bt2—15 to 20 inches; gravelly loam
BCt1—20 to 27 inches; very gravelly loam
BCt2—27 to 36 inches; extremely gravelly loam
BCt3—36 to 51 inches; very gravelly loam
Crt—51 to 62 inches; bedrock

Characteristics of Minniecreek Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic hills
Parent material: Loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, California black oak, interior live oak, whiteleaf manzanita, Pacific poison oak, and toyon
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 40 percent coarse, angular gravel, 0 to 25 percent angular cobbles, 0 to 15 percent angular stones, 0 to 10 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; loam
BAt—2 to 8 inches; loam
Bt1—8 to 15 inches; loam
Bt2—15 to 24 inches; silty clay loam
BCt—24 to 32 inches; silty clay loam
Crt1—32 to 47 inches; bedrock
Crt2—47 to 58 inches; bedrock
Cr—58 to 75 inches; bedrock

Minor Components in Map Unit 564

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy soils that are 10 to 20 inches deep to paralithic bedrock
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to lithic bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic hills
Hydric soil status: Not hydric

565—Dunstone-Argonaut taxadjunct-Sunnyslope complex, 2 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County
Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 200 to 1,600 feet (61 to 488 meters)
Mean annual precipitation: 28 to 35 inches (711 to 889 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Dunstone loam, dry—35 percent
Argonaut taxadjunct loam—30 percent

Sunnyslope loam—20 percent
Minor components—15 percent

Characteristics of Dunstone Loam, Dry

Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 2.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; loam
BAt—2 to 7 inches; loam
Bt1—7 to 10 inches; loam
Bt2—10 to 16 inches; loam
Cr—16 inches; bedrock

Characteristics of Argonaut Taxadjunct Loam

Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Parent material: Clayey residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subangular gravel, 0 to 5 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3e-4
Land capability, nonirrigated: 3e-4

Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; loam
Bt1—2 to 8 inches; clay loam
Bt2—8 to 14 inches; clay
Bt3—14 to 20 inches; clay
BCt1—20 to 26 inches; clay
BCt2—26 to 30 inches; clay loam
Cr—30 inches; bedrock

Characteristics of Sunnyslope Loam

Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 5 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-4
Land capability, nonirrigated: 7e-4
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; loam
Bt1—2 to 6 inches; gravelly loam
Bt2—6 to 10 inches; very cobbly loam
Bt3—10 to 14 inches; extremely gravelly clay loam
Crt—14 inches; bedrock

Minor Components in Map Unit 565

Fine textured soils that are 20 to 40 inches deep to paralithic bedrock
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Loafercreek and similar soils
Composition: 4 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Auburn loam and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Soils that have an abrupt clay layer and are 20 to 40 inches deep to bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

566—Dunstone-Loafercreek-Katskillhill complex, 2 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County
Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 295 to 895 feet (91 to 274 meters)
Mean annual precipitation: 28 to 40 inches (711 to 1,016 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Dunstone loam, dry—45 percent
Loafercreek silt loam, dry—20 percent
Katskillhill loam—15 percent
Minor components—20 percent

Characteristics of Dunstone Loam, Dry

Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 2.8 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; loam
BAt—2 to 7 inches; loam
Bt1—7 to 10 inches; loam
Bt2—10 to 16 inches; loam
Cr—16 inches; bedrock

Characteristics of Loafercreek Silt Loam, Dry

Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: 0 to 25 percent coarse, subangular gravel
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A1—0 to 2 inches; silt loam
A2—2 to 4 inches; silt loam
BAt—4 to 11 inches; loam
Bt1—11 to 20 inches; loam
Bt2—20 to 29 inches; loam
Crt—29 inches; bedrock

Characteristics of Katskillhill Loam

Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Parent material: Loamy residuum over clayey residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam

Percentage of the surface covered by rock fragments: 0 to 3 percent medium, subangular gravel
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.0 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3e-3
Land capability, nonirrigated: 3e-3
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; loam
BAt—2 to 8 inches; loam
Bt1—8 to 12 inches; very gravelly loam
2Bt2—12 to 19 inches; clay
2Btss1—19 to 29 inches; clay
2Btss2—29 to 42 inches; clay
2R—42 inches; bedrock

Minor Components in Map Unit 566

Auburn loam and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Clayey soils that are 10 to 20 inches deep to paralithic bedrock
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Lomarica and similar soils
Composition: 4 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Argonaut taxadjunct loam and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Clayey-skeletal soils that are more than 40 inches deep to paralithic bedrock
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

567—Dunstone-Loafercreek-Argonaut taxadjunct complex, 2 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County
Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 200 to 1,600 feet (61 to 488 meters)
Mean annual precipitation: 28 to 40 inches (711 to 1,016 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Dunstone loam, dry—40 percent
Loafercreek silt loam, dry—25 percent
Argonaut taxadjunct loam—20 percent
Minor components—15 percent

Characteristics of Dunstone Loam, Dry

Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 2.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; loam
BAt—2 to 7 inches; loam
Bt1—7 to 10 inches; loam
Bt2—10 to 16 inches; loam
Cr—16 inches; bedrock

Characteristics of Loafercreek Silt Loam, Dry

Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Parent material: Loamy residuum weathered from metavolcanic rocks

Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Silt loam
Percentage of the surface covered by rock fragments: 0 to 25 percent coarse, subangular gravel
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A1—0 to 2 inches; silt loam
A2—2 to 4 inches; silt loam
BAt—4 to 11 inches; loam
Bt1—11 to 20 inches; loam
Bt2—20 to 29 inches; loam
Crt—29 inches; bedrock

Characteristics of Argonaut Taxadjunct Loam

Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Parent material: Clayey residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subangular gravel, 0 to 5 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3e-4
Land capability, nonirrigated: 3e-4
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; loam
Bt1—2 to 8 inches; clay loam

Bt2—8 to 14 inches; clay
Bt3—14 to 20 inches; clay
BCt1—20 to 26 inches; clay
BCt2—26 to 30 inches; clay loam
Cr—30 inches; bedrock

Minor Components in Map Unit 567

Auburn loam and similar soils
Composition: 7 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Katskillhill and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Soils that have an abrupt clay layer and are 40 to 60 inches deep to bedrock
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Metavolcanic hills
Hydric soil status: Not hydric

577—Parkshill-Flanly-Hurleton complex, 2 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County
Major uses: Livestock grazing, wildlife habitat, homesite development, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 495 to 2,200 feet (152 to 671 meters)
Mean annual precipitation: 32 to 45 inches (813 to 1,143 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 235 to 260 days

Map Unit Composition

Parkshill coarse sandy loam—40 percent
Flanly loam—25 percent
Hurleton gravelly sandy loam—20 percent
Minor components—15 percent

Characteristics of Parkshill Coarse Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Granitic hills
Parent material: Fine-loamy residuum weathered from intrusive igneous rocks

Observed vegetation: Annual grasses and forbs, blue oak, and scattered interior live oak, foothill pine, whiteleaf manzanita, buckbrush, Pacific poison oak, valley oak, and ponderosa pine
Texture of the surface layer: Coarse sandy loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4e-4
Land capability, nonirrigated: 4e-4
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; coarse sandy loam
AB—2 to 8 inches; coarse sandy loam
Bw1—8 to 18 inches; coarse sandy loam
Bw2—18 to 26 inches; coarse sandy loam
Bt1—26 to 35 inches; sandy clay loam
Bt2—35 to 53 inches; sandy clay loam
BCt—53 to 61 inches; sandy clay loam

Characteristics of Flanly Loam

Slope: 2 to 15 percent
Geomorphic position: Granitic hills
Parent material: Fine-loamy residuum weathered from intrusive igneous rocks
Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 3 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; loam
BA—2 to 5 inches; sandy loam
Bt1—5 to 10 inches; sandy loam
Bt2—10 to 23 inches; sandy clay loam
Crt—23 to 26 inches; bedrock

Characteristics of Hurleton Gravelly Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Granitic hills
Parent material: Gravelly and loamy residuum weathered from intrusive igneous rocks
Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita
Texture of the surface layer: Gravelly sandy loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-4
Land capability, nonirrigated: 7e-4
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A1—0 to 3 inches; gravelly sandy loam
A2—3 to 7 inches; gravelly sandy loam
BA—7 to 12 inches; gravelly sandy loam
Bt1—12 to 16 inches; very gravelly sandy loam
Bt2—16 to 19 inches; very gravelly sandy loam
Bt3—19 to 25 inches; extremely gravelly sandy clay loam
R—25 inches; bedrock

Minor Components in Map Unit 577

Mounthope and similar soils
Composition: 4 percent
Slope: 2 to 15 percent
Geomorphic position: Granitic hills
Hydric soil status: Not hydric

Swedesflat and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Granitic hills
Hydric soil status: Not hydric

Coarse-loamy soils that are less than 40 inches deep to paralithic bedrock
Composition: 3 percent
Slope: 2 to 15 percent

Geomorphic position: Granitic hills
Hydric soil status: Not hydric

Argonaut taxadjunct loam and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Granitic hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Granitic hills
Hydric soil status: Not hydric

578—Flanly-Swedesflat complex, 2 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County
Major uses: Livestock grazing, wildlife habitat, watershed, and homesite development
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 495 to 1,945 feet (152 to 594 meters)
Mean annual precipitation: 32 to 45 inches (813 to 1,143 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 235 to 260 days

Map Unit Composition

Flanly loam—45 percent
Swedesflat cobbly fine sandy loam—35 percent
Minor components—20 percent

Characteristics of Flanly Loam

Slope: 2 to 15 percent
Geomorphic position: Granitic hills
Parent material: Fine-loamy residuum weathered from intrusive igneous rocks
Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 3 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1

Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; loam
BA—2 to 5 inches; sandy loam
Bt1—5 to 10 inches; sandy loam
Bt2—10 to 23 inches; sandy clay loam
Crt—23 to 26 inches; bedrock

Characteristics of Swedesflat Cobbly Fine Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Granitic hills
Parent material: Cobbly and loamy residuum weathered from intrusive igneous rocks
Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita
Texture of the surface layer: Cobbly fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 3 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.2 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-4
Land capability, nonirrigated: 7e-4
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; cobbly fine sandy loam
ABt—2 to 8 inches; cobbly sandy loam
Bt—8 to 12 inches; sandy loam
Crt—12 to 18 inches; bedrock
Cr—18 inches; bedrock

Minor Components in Map Unit 578

Fine-loamy soils that are 40 to 60 inches deep to lithic bedrock
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Granitic hills
Hydric soil status: Not hydric

Argonaut taxadjunct loam and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Granitic hills
Hydric soil status: Not hydric

Loamy soils that are less than 20 inches deep to lithic bedrock
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Granitic hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Granitic hills
Hydric soil status: Not hydric

580—Surnuf taxadjunct-Griffgulch-Rock outcrop complex, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Timber production, homesite development, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 2,995 feet (610 to 914 meters)
Mean annual precipitation: 50 to 55 inches (1,270 to 1,397 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 230 to 250 days

Map Unit Composition

Surnuf taxadjunct loam—40 percent
Griffgulch very gravelly silt loam—25 percent
Rock outcrop (metavolcanic)—20 percent
Minor components—15 percent

Characteristics of Surnuf Taxadjunct Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, deerbrush, whiteleaf manzanita, Pacific poison oak, and Pacific madrone
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular boulders, 0 to 15 percent subangular stones, 0 to 20 percent subangular cobbles, 0 to 30 percent subangular gravel
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 5 inches; loam
Bt1—5 to 11 inches; clay loam
Bt2—11 to 18 inches; silty clay
Bt3—18 to 31 inches; silty clay
Bt4—31 to 43 inches; silty clay
Bt5—43 to 54 inches; very stony silty clay loam
BCt—54 to 67 inches; silty clay loam

Characteristics of Griffgulch Very Gravelly Silt Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Silty and clayey residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, whiteleaf manzanita, Pacific poison oak, and Pacific madrone
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A—3 to 7 inches; very gravelly silt loam
Bt1—7 to 11 inches; very cobbly silty clay loam
Bt2—11 to 20 inches; extremely cobbly silty clay loam
Bt3—20 to 33 inches; very cobbly silty clay
Bt4—33 to 47 inches; very cobbly clay
Bt5—47 to 58 inches; extremely gravelly clay
R—58 inches; bedrock

Characteristics of Rock Outcrop (Metavolcanic)

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 580

Areas with piles of boulders and stones on the surface
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to lithic bedrock
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Soils that have less than 35 percent clay in the upper part of the subsoil
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are more than 60 inches deep to lithic bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

581—Surnuf taxadjunct-Griffgulch complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Timber production, homesite development, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 895 to 2,995 feet (274 to 914 meters)
Mean annual precipitation: 50 to 55 inches (1,270 to 1,397 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 230 to 250 days

Map Unit Composition

Surnuf taxadjunct loam—65 percent
Griffgulch very gravelly silt loam—20 percent
Minor components—15 percent

Characteristics of Surnuf Taxadjunct Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains

Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, deerbrush, whiteleaf manzanita, Pacific poison oak, and Pacific madrone
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular boulders, 0 to 15 percent subangular stones, 0 to 20 percent subangular cobbles, 0 to 30 percent subangular gravel
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 5 inches; loam
Bt1—5 to 11 inches; clay loam
Bt2—11 to 18 inches; silty clay
Bt3—18 to 31 inches; silty clay
Bt4—31 to 43 inches; silty clay
Bt5—43 to 54 inches; very stony silty clay loam
BCt—54 to 67 inches; silty clay loam

Characteristics of Griffgulch Very Gravelly Silt Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, deerbrush, whiteleaf manzanita, Pacific poison oak, and Pacific madrone
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A—3 to 7 inches; very gravelly silt loam
Bt1—7 to 11 inches; very cobbly silty clay loam
Bt2—11 to 20 inches; extremely cobbly silty clay loam
Bt3—20 to 33 inches; very cobbly silty clay
Bt4—33 to 47 inches; very cobbly clay
Bt5—47 to 58 inches; extremely gravelly clay
R—58 inches; bedrock

Minor Components in Map Unit 581

Areas with piles of boulders and stones on the surface
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to lithic bedrock
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Soils that have less than 35 percent clay in the upper part of the subsoil
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are more than 60 inches deep to lithic bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

582—Surnuf taxadjunct-Griffgulch complex, 30 to 50 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 895 to 2,995 feet (274 to 914 meters)
Mean annual precipitation: 50 to 55 inches (1,270 to 1,397 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 230 to 250 days

Map Unit Composition

Surnuf taxadjunct loam—50 percent
Griffgulch very gravelly silt loam—35 percent
Minor components—15 percent

Characteristics of Surnuf Taxadjunct Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on metamorphic mountains
Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, deerbrush, whiteleaf manzanita, Pacific poison oak, and Pacific madrone
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders, 0 to 20 percent subangular cobbles, 0 to 30 percent subangular gravel
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 5 inches; loam
Bt1—5 to 11 inches; clay loam
Bt2—11 to 18 inches; silty clay
Bt3—18 to 31 inches; silty clay
Bt4—31 to 43 inches; silty clay
Bt5—43 to 54 inches; very stony silty clay loam
BCt—54 to 67 inches; silty clay loam

Characteristics of Griffgulch Very Gravelly Silt Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on metamorphic mountains
Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, deerbrush, whiteleaf manzanita, Pacific poison oak, and Pacific madrone
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 30 percent medium,

subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A—3 to 7 inches; very gravelly silt loam
Bt1—7 to 11 inches; very cobbly silty clay loam
Bt2—11 to 20 inches; extremely cobbly silty clay loam
Bt3—20 to 33 inches; very cobbly silty clay
Bt4—33 to 47 inches; very cobbly clay
Bt5—47 to 58 inches; extremely gravelly clay
R—58 inches; bedrock

Minor Components in Map Unit 582

Areas with piles of boulders and stones on the surface
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to lithic bedrock
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

Soils that have less than 35 percent clay in the upper part of the subsoil
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are more than 60 inches deep to lithic bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

583—Surnuf taxadjunct-Griffgulch complex, 50 to 70 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 895 to 2,995 feet (274 to 914 meters)
Mean annual precipitation: 50 to 55 inches (1,270 to 1,397 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 230 to 250 days

Map Unit Composition

Surnuf taxadjunct loam—50 percent
Griffgulch very gravelly silt loam—35 percent
Minor components—15 percent

Characteristics of Surnuf Taxadjunct Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metamorphic mountains
Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, deerbrush, whiteleaf manzanita, Pacific poison oak, and Pacific madrone
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular boulders, 10 to 15 percent subangular stones, 0 to 20 percent subangular cobbles, 0 to 30 percent subangular gravel
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 5 inches; loam
Bt1—5 to 11 inches; clay loam
Bt2—11 to 18 inches; silty clay
Bt3—18 to 31 inches; silty clay
Bt4—31 to 43 inches; silty clay
Bt5—43 to 54 inches; very stony silty clay loam
BCt—54 to 67 inches; silty clay loam

Characteristics of Griffgulch Very Gravelly Silt Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metamorphic mountains
Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, deerbrush, whiteleaf manzanita, Pacific poison oak, and Pacific madrone
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A—3 to 7 inches; very gravelly silt loam
Bt1—7 to 11 inches; very cobbly silty clay loam
Bt2—11 to 20 inches; extremely cobbly silty clay loam
Bt3—20 to 33 inches; very cobbly silty clay
Bt4—33 to 47 inches; very cobbly clay
Bt5—47 to 58 inches; extremely gravelly clay
R—58 inches; bedrock

Minor Components in Map Unit 583

Areas with piles of boulders and stones on the surface
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to lithic bedrock
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

Soils that have less than 35 percent clay in the upper part of the subsoil
Composition: 3 percent
Slope: 50 to 70 percent

Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are more than 60 inches deep to lithic bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

584—Flanly-Swedesflat-Rackerby complex, 15 to 30 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County
Major uses: Livestock grazing, wildlife habitat, homesite development, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 495 to 2,095 feet (152 to 640 meters)
Mean annual precipitation: 30 to 50 inches (762 to 1,270 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 235 to 260 days

Map Unit Composition

Flanly loam—35 percent
Swedesflat cobbly fine sandy loam—30 percent
Rackerby very gravelly sandy loam—25 percent
Minor components—10 percent

Characteristics of Flanly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Parent material: Fine-loamy residuum and/or colluvium derived from intrusive igneous rocks
Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 3 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; loam
BA—2 to 5 inches; sandy loam
Bt1—5 to 10 inches; sandy loam
Bt2—10 to 23 inches; sandy clay loam
Crt—23 to 26 inches; bedrock

Characteristics of Swedesflat Cobbly Fine Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Parent material: Cobbly and loamy residuum weathered from intrusive igneous rocks
Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita
Texture of the surface layer: Cobbly fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 3 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.2 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-4
Land capability, nonirrigated: 7e-4
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; cobbly fine sandy loam
ABt—2 to 8 inches; cobbly sandy loam
Bt—8 to 12 inches; sandy loam
Crt—12 to 18 inches; bedrock
Cr—18 inches; bedrock

Characteristics of Rackerby Very Gravelly Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Parent material: Gravelly and loamy residuum weathered from intrusive igneous rocks
Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita
Texture of the surface layer: Very gravelly sandy loam
Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 0 to 5 percent subangular cobbles, 0 to 5 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-4
Land capability, nonirrigated: 7e-4
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; very gravelly sandy loam
AB—2 to 5 inches; gravelly sandy loam
Bw—5 to 13 inches; very gravelly sandy loam
Cr—13 inches; bedrock

Minor Components in Map Unit 584

Sommeyflat and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Mounthope and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Hurleton and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

Loamy soils that are less than 20 inches deep to lithic bedrock
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic hills
Hydric soil status: Not hydric

585—Flanly-Sommeyflat complex, 2 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County
Major uses: Livestock grazing, wildlife habitat, homesite development, and watershed

Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 1,095 to 2,200 feet (335 to 671 meters)
Mean annual precipitation: 35 to 50 inches (889 to 1,270 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 240 to 260 days

Map Unit Composition

Flanly loam—45 percent
Sommeyflat loam—35 percent
Minor components—20 percent

Characteristics of Flanly Loam

Slope: 2 to 15 percent
Geomorphic position: Intrusive igneous hills
Parent material: Fine-loamy residuum weathered from intrusive igneous rocks
Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 3 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 3.4 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 4e-1
- *Land capability, nonirrigated:* 4e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- A—0 to 2 inches; loam
- BA—2 to 5 inches; sandy loam
- Bt1—5 to 10 inches; sandy loam
- Bt2—10 to 23 inches; sandy clay loam
- Crt—23 to 26 inches; bedrock

Characteristics of Sommeyflat Loam

Slope: 2 to 15 percent
Geomorphic position: Intrusive igneous hills
Parent material: Fine-loamy residuum and/or colluvium derived from intrusive igneous rocks
Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, Pacific poison oak, buckbrush, and whiteleaf manzanita
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 2 percent coarse, subangular gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; loam
BA—2 to 9 inches; loam
Bt1—9 to 14 inches; loam
Bt2—14 to 24 inches; loam
BCt—24 to 31 inches; loam
C1—31 to 62 inches; loam
C2—62 to 70 inches; loam

Minor Components in Map Unit 585

Mounthope and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Intrusive igneous hills
Hydric soil status: Not hydric

Loamy soils that are less than 20 inches deep to lithic bedrock
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Intrusive igneous hills
Hydric soil status: Not hydric

Argonaut taxadjunct loam and similar soils
Composition: 4 percent
Slope: 2 to 15 percent
Geomorphic position: Intrusive igneous hills
Hydric soil status: Not hydric

Hurleton and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Intrusive igneous hills
Hydric soil status: Not hydric

Fine textured soils that are more than 60 inches deep to bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Intrusive igneous hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Intrusive igneous hills
Hydric soil status: Not hydric

586—Sommeyflat-Mounthope complex, 15 to 30 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County
Major uses: Wildlife habitat, homesite development, livestock grazing, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 1,600 to 2,095 feet (488 to 640 meters)
Mean annual precipitation: 45 to 55 inches (1,143 to 1,397 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 240 to 260 days

Map Unit Composition

Sommeyflat loam—45 percent
Mounthope loam—40 percent
Minor components—15 percent

Characteristics of Sommeyflat Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metamorphic and intrusive igneous hills
Parent material: Fine-loamy colluvium and/or residuum weathered from intrusive igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, foothill pine, whiteleaf manzanita, Pacific poison oak, buckbrush, toyon, and ponderosa pine
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 2 percent coarse, subangular gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; loam

BA—2 to 9 inches; loam
Bt1—9 to 14 inches; loam
Bt2—14 to 24 inches; loam
BCt—24 to 31 inches; loam
C1—31 to 62 inches; loam
C2—62 to 70 inches; loam

Characteristics of Mounthope Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metamorphic and intrusive igneous hills
Parent material: Fine-loamy colluvium and/or residuum weathered from intrusive igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, foothill pine, whiteleaf manzanita, Pacific poison oak, buckbrush, toyon, and ponderosa pine
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; loam
Bt1—3 to 7 inches; loam
Bt2—7 to 15 inches; loam
Bt3—15 to 22 inches; gravelly clay loam
Bt4—22 to 26 inches; gravelly clay loam
Bt5—26 to 31 inches; very gravelly clay loam
Bt6—31 to 42 inches; very gravelly clay loam
Bt7—42 to 52 inches; gravelly clay loam
Cr—52 inches; bedrock

Minor Components in Map Unit 586

Flanly and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metamorphic and intrusive igneous hills
Hydric soil status: Not hydric

Argonaut taxadjunct loam and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metamorphic and intrusive igneous hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metamorphic and intrusive igneous hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metamorphic and intrusive igneous hills
Hydric soil status: Not hydric

Loamy soils that are less than 20 inches deep to lithic bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metamorphic and intrusive igneous hills
Hydric soil status: Not hydric

587—Sommeyflat-Mounthope-Hurleton complex, 30 to 50 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 800 to 1,800 feet (244 to 549 meters)
Mean annual precipitation: 35 to 45 inches (889 to 1,143 millimeters)
Mean annual air temperature: 57 to 59 degrees F (14 to 15 degrees C)
Frost-free period: 240 to 260 days

Map Unit Composition

Sommeyflat loam—35 percent
Mounthope loam—30 percent
Hurleton gravelly sandy loam—25 percent
Minor components—10 percent

Characteristics of Sommeyflat Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on intrusive igneous and metamorphic hills
Parent material: Fine-loamy colluvium and/or residuum weathered from intrusive igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, foothill pine, whiteleaf manzanita, Pacific poison oak, buckbrush, toyon, and ponderosa pine
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 2 percent coarse, subangular gravel

Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; loam
BA—2 to 9 inches; loam
Bt1—9 to 14 inches; loam
Bt2—14 to 24 inches; loam
BCt—24 to 31 inches; loam
C1—31 to 62 inches; loam
C2—62 to 70 inches; loam

Characteristics of Mounthope Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on intrusive igneous and metamorphic hills
Parent material: Fine-loamy colluvium and/or residuum weathered from intrusive igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, foothill pine, whiteleaf manzanita, Pacific poison oak, buckbrush, toyon, and ponderosa pine
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; loam
Bt1—3 to 7 inches; loam
Bt2—7 to 15 inches; loam
Bt3—15 to 22 inches; gravelly clay loam
Bt4—22 to 26 inches; gravelly clay loam
Bt5—26 to 31 inches; very gravelly clay loam
Bt6—31 to 42 inches; very gravelly clay loam
Bt7—42 to 52 inches; gravelly clay loam
Cr—52 inches; bedrock

Characteristics of Hurleton Gravelly Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on intrusive igneous and metamorphic hills
Parent material: Gravelly and loamy colluvium and/or residuum weathered from intrusive igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, foothill pine, whiteleaf manzanita, Pacific poison oak, buckbrush, toyon, and ponderosa pine
Texture of the surface layer: Gravelly sandy loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-4
Land capability, nonirrigated: 7e-4
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A1—0 to 3 inches; gravelly sandy loam
A2—3 to 7 inches; gravelly sandy loam
BA—7 to 12 inches; gravelly sandy loam
Bt1—12 to 16 inches; very gravelly sandy loam
Bt2—16 to 19 inches; very gravelly sandy loam
Bt3—19 to 25 inches; extremely gravelly sandy clay loam
R—25 inches; bedrock

Minor Components in Map Unit 587

Swedesflat and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on intrusive igneous and metamorphic hills
Hydric soil status: Not hydric

Flanly and similar soils
Composition: 3 percent
Slope: 30 to 50 percent

Geomorphic position: Backslopes on intrusive igneous and metamorphic hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on intrusive igneous and metamorphic hills
Hydric soil status: Not hydric

588—Ultic Haploxeralfs, thermic, high terrace, 2 to 15 percent slopes

Map Unit Setting

General location: Southeastern Butte County
Major uses: Livestock grazing, wildlife habitat, watershed, and homesite development
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 400 to 800 feet (122 to 244 meters)
Mean annual precipitation: 28 to 30 inches (711 to 762 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Ultic Haploxeralfs, thermic, high terrace—95 percent
Minor components—5 percent

Characteristics of Ultic Haploxeralfs, Thermic, High Terrace

Slope: 2 to 15 percent
Geomorphic position: Dissected high terraces
Parent material: Loamy alluvium over loamy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Blue oak and annual grasses and forbs, with some foothill pine, whiteleaf manzanita, and buckbrush
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (cemented horizon): 20 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 10 to 60 inches
Available water capacity: Low (about 2.8 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; loam
BAt—2 to 6 inches; gravelly loam

Bt1—6 to 12 inches; very gravelly loam
Bt2—12 to 20 inches; very gravelly loam
Bt3—20 to 32 inches; extremely gravelly clay loam
Bq1—32 to 39 inches; extremely gravelly loam
Bq2—39 to 50 inches; extremely gravelly sandy clay loam

Minor Components in Map Unit 588

Palexeralfs, clayey-skeletal, and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Dissected high terraces
Hydric soil status: Not hydric

589—Ultic Haploxeralfs, thermic, high terrace, 15 to 30 percent slopes

Map Unit Setting

General location: Southeastern Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 400 to 800 feet (122 to 244 meters)
Mean annual precipitation: 28 to 30 inches (711 to 762 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Ultic Haploxeralfs, thermic, high terrace—95 percent
Minor components—5 percent

Characteristics of Ultic Haploxeralfs, Thermic, High Terrace

Slope: 15 to 30 percent
Geomorphic position: Risers on dissected high terraces
Parent material: Loamy alluvium over loamy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Blue oak and annual grasses and forbs, with some foothill pine, whiteleaf manzanita, and buckbrush
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Depth to a restrictive feature (cemented horizon): 20 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 10 to 60 inches
Available water capacity: Low (about 2.8 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; loam
BAt—2 to 6 inches; gravelly loam
Bt1—6 to 12 inches; very gravelly loam
Bt2—12 to 20 inches; very gravelly loam
Bt3—20 to 32 inches; extremely gravelly clay loam
Bq1—32 to 39 inches; extremely gravelly loam
Bq2—39 to 50 inches; extremely gravelly sandy clay loam

Minor Components in Map Unit 589

Palexeralfs, clayey-skeletal, and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Risers on dissected high terraces
Hydric soil status: Not hydric

590—Vistarobles-Redding-Argonaut taxadjunct-Haploxererts complex, 0 to 9 percent slopes

Map Unit Setting

General location: Southeastern Butte County and northwestern Yuba County
Major uses: Livestock grazing, homesite development, watershed, and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley, Northern Sierra Nevada foothills
Elevation: 110 to 350 feet (34 to 107 meters)
Mean annual precipitation: 20 to 23 inches (508 to 584 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 240 to 260 days

Map Unit Composition

Vistarobles sandy loam—30 percent
Redding loam—25 percent
Argonaut taxadjunct loam—20 percent
Haploxererts gravelly silty clay—15 percent
Minor components—10 percent

Characteristics of Vistarobles Sandy Loam

Slope: 0 to 9 percent
Geomorphic position: Swales on intermediate terraces
Parent material: Loamy alluvium over clayey and gravelly alluvium over cemented, sandy and gravelly alluvium over sandy and cobbly and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, rounded gravel, 0 to 15 percent rounded cobbles
Depth to a restrictive feature (duripan): 10 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None

Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 20 inches
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Storie index: 10 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 5 inches; sandy loam
A2—5 to 10 inches; sandy clay loam
2Bt—10 to 14 inches; gravelly clay
3Bqm—14 to 34 inches; cemented, gravelly duripan
3C—34 to 40 inches; very cobbly sandy loam

Characteristics of Redding Loam

Slope: 0 to 9 percent
Geomorphic position: Mounds on intermediate terraces
Parent material: Loamy alluvium over clayey alluvium over cemented, sandy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, rounded gravel
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 24 to 40 inches
Available water capacity: Moderate (about 5.4 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-3
Land capability, nonirrigated: 3e-3
Storie index: 32 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A1—0 to 4 inches; loam
A2—4 to 11 inches; loam
BA—11 to 24 inches; loam
2Bt—24 to 35 inches; clay
3Bqm—35 to 40 inches; cemented, very gravelly duripan

Characteristics of Argonaut Taxadjunct Loam

Slope: 0 to 9 percent
Geomorphic position: Metamorphic hills

Parent material: Loamy residuum over clayey residuum weathered from metavolcanic rocks
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subangular gravel, 0 to 5 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-4
Land capability, nonirrigated: 3e-4
Storie index: 49 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; loam
Bt1—2 to 8 inches; clay loam
Bt2—8 to 14 inches; clay
Bt3—14 to 20 inches; clay
BCt1—20 to 26 inches; clay
BCt2—26 to 30 inches; clay loam
Cr—30 inches; bedrock

Characteristics of Haploxererts Gravelly Silty Clay

Slope: 0 to 5 percent
Geomorphic position: Small basins and swales on intermediate terraces
Parent material: Clayey alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly silty clay
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, rounded gravel, 0 to 5 percent rounded cobbles
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 60 inches
Available water capacity: Moderate (about 5.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 3e-3
Land capability, nonirrigated: 3e-3
Storie index: 17 (revised)

Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; gravelly silty clay
Bw—2 to 10 inches; gravelly clay
Bss—10 to 30 inches; gravelly clay
2BCt1—30 to 33 inches; silty clay
2BCt2—33 to 41 inches; silty clay
2Cr—41 to 44 inches; bedrock

Minor Components in Map Unit 590

Durixeralfs, loamy, and similar soils
Composition: 5 percent
Slope: 0 to 9 percent
Geomorphic position: Intermediate terraces
Hydric soil status: Not hydric

Lomarica and similar soils
Composition: 3 percent
Slope: 0 to 9 percent
Geomorphic position: Metamorphic hills
Hydric soil status: Not hydric

Haploxeralfs, fine-loamy, 40 to 60 inches deep to bedrock, and similar soils
Composition: 2 percent
Slope: 0 to 9 percent
Geomorphic position: Metamorphic hills
Hydric soil status: Not hydric

603—Oroville-Thermalito-Fernandez-Thompsonflat complex, 0 to 9 percent slopes

Map Unit Setting

General location: Central and northwestern Butte County
Major uses: Livestock grazing, wildlife habitat, watershed, homesite development, and small olive orchards
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 110 to 255 feet (34 to 79 meters)
Mean annual precipitation: 20 to 26 inches (508 to 660 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Oroville gravelly fine sandy loam—30 percent
Thermalito sandy loam—25 percent
Fernandez sandy loam—15 percent
Thompsonflat fine sandy loam—15 percent
Minor components—15 percent

Characteristics of Oroville Gravelly Fine Sandy Loam

Slope: 0 to 9 percent
Geomorphic position: Swales on intermediate terraces

Parent material: Loamy and gravelly alluvium over clayey and gravelly alluvium over cemented, loamy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly fine sandy loam
Percentage of the surface covered by rock fragments: 5 to 20 percent coarse, well rounded gravel
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Low (about 2.7 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 4e-3
Land capability, nonirrigated: 4e-3
Storie index: 7 (revised)
Hydric soil status: Hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly fine sandy loam
BAt—2 to 6 inches; gravelly sandy loam
Bt1—6 to 13 inches; gravelly clay loam
2Bt2—13 to 17 inches; gravelly clay
2Btg—17 to 23 inches; gravelly sandy clay
3Bqm1—23 to 31 inches; cemented, extremely gravelly duripan
3Bqm2—31 to 60 inches; cemented, extremely gravelly duripan

Characteristics of Thermalito Sandy Loam

Slope: 0 to 9 percent
Geomorphic position: Mounds on intermediate terraces
Parent material: Loamy and gravelly alluvium over clayey and gravelly alluvium over cemented, sandy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: 0 to 20 percent medium, well rounded gravel
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 14 to 40 inches
Available water capacity: Low (about 3.7 inches)

Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 3e-3
Land capability, nonirrigated: 3e-3
Storie index: 22 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; sandy loam
Bt1—2 to 6 inches; gravelly sandy loam
Bt2—6 to 12 inches; sandy clay loam
Bt3—12 to 18 inches; gravelly sandy clay loam
Bt4—18 to 23 inches; gravelly sandy clay loam
Bt5—23 to 25 inches; gravelly sandy clay loam
2Bt6—25 to 29 inches; gravelly clay
2Bt7—29 to 32 inches; gravelly clay
3Bqm—32 to 60 inches; cemented, gravelly duripan

Characteristics of Fernandez Sandy Loam

Slope: 0 to 9 percent
Geomorphic position: The top of intermediate terraces
Parent material: Fine-loamy alluvium over clayey and gravelly alluvium over cemented, sandy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: 2 to 15 percent medium, well rounded gravel
Depth to a restrictive feature (duripan): 60 to 81 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 40 to 80 inches
Available water capacity: High (about 8.6 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-3
Land capability, nonirrigated: 3e-3
Storie index: 84 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; sandy loam
Bt1—2 to 6 inches; sandy clay loam
Bt2—6 to 18 inches; sandy clay loam
2Bt3—18 to 28 inches; clay loam
2Bt4—28 to 44 inches; clay loam
2Bt5—44 to 57 inches; clay
2Bt6—57 to 65 inches; gravelly clay

2Bt7—65 to 73 inches; gravelly clay loam
3Btq—73 to 85 inches; cemented, gravelly duripan

Characteristics of Thompsonflat Fine Sandy Loam

Slope: 0 to 9 percent
Geomorphic position: Intermediate terraces
Parent material: Loamy alluvium over clayey alluvium over sandy and gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, well rounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 40 to 81 inches
Available water capacity: Low (about 4.1 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3e-3
Land capability, nonirrigated: 3e-3
Storie index: 83 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 3 inches; fine sandy loam
Bt1—3 to 7 inches; fine sandy loam
Bt2—7 to 11 inches; sandy clay loam
Bt3—11 to 15 inches; sandy clay
2Bt4—15 to 22 inches; gravelly sandy clay
3Btq1—22 to 35 inches; extremely gravelly sandy clay loam
3Btq2—35 to 45 inches; extremely gravelly coarse sandy loam
3Btq3—45 to 53 inches; extremely gravelly coarse sandy loam
3Btq4—53 to 66 inches; extremely gravelly coarse sandy loam
3Btq5—66 to 80 inches; extremely gravelly coarse sandy loam

Minor Components in Map Unit 603

Vistarobles and similar soils
Composition: 2 percent
Slope: 0 to 5 percent
Geomorphic position: Swales on intermediate terraces
Hydric soil status: Hydric

Loamy soils that are 10 to 20 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 5 percent
Geomorphic position: Swales on intermediate terraces
Hydric soil status: Hydric

Palexeralfs, fine, more than 60 inches deep, and similar soils
Composition: 2 percent
Slope: 0 to 9 percent
Geomorphic position: The top of intermediate terraces
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 2 percent
Slope: 0 percent
Geomorphic position: Vernal pools on intermediate terraces
Hydric soil status: Hydric

Aquerts, fine, with a duripan at a depth of 20 to 40 inches, and similar soils
Composition: 1 percent
Slope: 0 percent
Geomorphic position: Vernal pools on intermediate terraces
Hydric soil status: Hydric

Fine-loamy soils that are 20 to 40 inches deep to a duripan
Composition: 1 percent
Slope: 0 to 9 percent
Geomorphic position: Swales on intermediate terraces
Hydric soil status: Not hydric

Redding and similar soils
Composition: 1 percent
Slope: 0 to 9 percent
Geomorphic position: Mounds on intermediate terraces
Hydric soil status: Not hydric

Fine textured soils that are deep to a duripan and similar soils
Composition: 1 percent
Slope: 0 to 5 percent
Geomorphic position: Swales on intermediate terraces
Hydric soil status: Not hydric

Fine-loamy soils that are deep to a duripan and similar soils
Composition: 1 percent
Slope: 0 to 9 percent
Geomorphic position: Mounds on intermediate terraces
Hydric soil status: Not hydric

Loamy-skeletal soils that are moderately deep to a duripan and similar soils
Composition: 1 percent
Slope: 0 to 9 percent
Geomorphic position: Mounds on intermediate terraces
Hydric soil status: Not hydric

Clayey-skeletal soils that are shallow to a duripan and similar soils
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Swales on intermediate terraces
Hydric soil status: Hydric

605—Duric Xerarents-Oroville complex, 0 to 1 percent slopes, leveled

Map Unit Setting

General location: Central Butte County
Major uses: Cropland and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 75 to 160 feet (23 to 50 meters)
Mean annual precipitation: 21 to 23 inches (533 to 584 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 252 days

Map Unit Composition

Duric Xerarents fine sandy loam, leveled—75 percent
Oroville gravelly fine sandy loam—20 percent
Minor components—5 percent

Characteristics of Duric Xerarents Fine Sandy Loam, Leveled

Slope: 0 to 1 percent
Geomorphic position: Leveled land on intermediate terraces
Parent material: Human-transported, loamy alluvium derived from igneous and metamorphic rocks over cemented, extremely gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs and rice
Surface feature: The surface has been leveled for agricultural production.
Texture of the surface layer: Fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, well rounded gravel
Depth to a restrictive feature (duripan): 10 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Altered hydrology:* Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
- *Annual flooding frequency:* None
- *Annual ponding frequency:* Frequent
- *Depth to a water table (zone of saturation):* 0 to 40 inches
- *Available water capacity:* Very low (about 1.5 inches)
- *Natural drainage class:* Poorly drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 7w-2
- *Land capability, nonirrigated:* 7w-2
- *Storie index:* 12 (revised)
- *Hydric soil status:* Hydric
- *Hydrologic soil group:* D

Typical profile
- Ap—0 to 5 inches; fine sandy loam
- C/Bt/Bqm—5 to 12 inches; clay and very gravelly sandy loam
- 2Bqmb—12 to 18 inches; cemented, extremely gravelly duripan

Characteristics of Oroville Gravelly Fine Sandy Loam

Slope: 0 to 1 percent
Geomorphic position: Mostly undisturbed areas on leveled land on intermediate terraces
Parent material: Loamy and gravelly alluvium over clayey and gravelly alluvium over cemented, loamy and extremely gravelly alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs and rice
Surface feature: The surface has been leveled for agricultural production.
Texture of the surface layer: Gravelly fine sandy loam
Percentage of the surface covered by rock fragments: 5 to 20 percent coarse, well rounded gravel
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Altered hydrology: Drainage and irrigation ditches have modified the natural depth to a water table. Roads, ditches, leveling, and urban construction have modified natural overland flow patterns, runoff, and the depth, frequency, and duration of ponding.
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Low (about 2.7 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6s-2
Land capability, nonirrigated: 6s-2
Storie index: 7 (revised)
Hydric soil status: Hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly fine sandy loam
BAt—2 to 6 inches; gravelly sandy loam
Bt1—6 to 13 inches; gravelly clay loam
2Bt2—13 to 17 inches; gravelly clay
2Btg—17 to 23 inches; gravelly sandy clay
3Bqm1—23 to 31 inches; cemented, extremely gravelly duripan
3Bqm2—31 to 60 inches; cemented, extremely gravelly duripan

Minor Components in Map Unit 605

Extremely altered soils in cut areas
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Leveled land on intermediate terraces
Hydric soil status: Hydric

Altered soils with up to 3 feet of fill on the surface
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Leveled land on intermediate terraces
Hydric soil status: Not hydric

606—Redtough-Fallager-Anita, gravelly duripan, complex, 0 to 3 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Livestock grazing, wildlife habitat, watershed, and homesite development
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 160 to 395 feet (50 to 121 meters)
Mean annual precipitation: 23 to 26 inches (584 to 660 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Redtough loam—45 percent
Fallager loam—30 percent
Anita gravelly clay, gravelly duripan—15 percent
Minor components—10 percent

Characteristics of Redtough Loam

Slope: 0 to 3 percent
Geomorphic position: Mounds on fan terraces
Parent material: Loamy alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, well rounded gravel, 0 to 10 percent well rounded cobbles
Depth to a restrictive feature (duripan): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 2 to 20 inches
Available water capacity: Very low (about 1.6 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Storie index: 11 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; loam
Bt1—1 to 7 inches; gravelly loam
Bt2—7 to 13 inches; very cobbly loam
Bqm—13 inches; cemented, very gravelly duripan

Characteristics of Fallager Loam

Slope: 0 to 3 percent
Geomorphic position: Swales on fan terraces

Parent material: Loamy alluvium over clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, rounded gravel, 0 to 25 percent rounded cobbles
Depth to a restrictive feature (duripan): 4 to 10 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 10 inches
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Storie index: 5 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; loam
Bt1—1 to 3 inches; gravelly clay loam
2Bt2—3 to 7 inches; gravelly clay
3Bqm—7 inches; cemented, gravelly duripan

Characteristics of Anita Gravelly Clay, Gravelly Duripan

Slope: 0 to 3 percent
Geomorphic position: Swales on fan terraces
Parent material: Clayey alluvium over cemented, sandy alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Surface feature: Surface cracking occurs when the soil is dry.
Texture of the surface layer: Gravelly clay
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, rounded gravel, 0 to 25 percent rounded cobbles
Depth to a restrictive feature (duripan): 10 to 20 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 20 inches
Available water capacity: Very low (about 1.5 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6s-5
Land capability, nonirrigated: 6s-5
Storie index: 2 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 3 inches; gravelly clay
Bss1—3 to 8 inches; gravelly clay
Bss2—8 to 15 inches; gravelly clay
2Bkqm—15 inches; cemented, gravelly duripan

Minor Components in Map Unit 606

Galt clay and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Swales on fan terraces
Hydric soil status: Hydric

Areas where the duripan crops out
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Fan terraces
Hydric soil status: Not hydric

Clayey soils that are less than 10 inches deep to a duripan
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Swales on fan terraces
Hydric soil status: Hydric

Loamy or clayey soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on fan terraces
Hydric soil status: Hydric

Tuscan gravelly loam and similar soils
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Mounds on fan terraces
Hydric soil status: Not hydric

609—Anita, gravelly duripan-Tuscan taxadjunct complex, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 190 to 295 feet (58 to 91 meters)
Mean annual precipitation: 25 to 27 inches (635 to 686 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 250 days

Map Unit Composition

Anita gravelly clay, gravelly duripan—50 percent
Tuscan taxadjunct gravelly clay loam—40 percent
Minor components—10 percent

Characteristics of Anita Gravelly Clay, Gravelly Duripan

Slope: 0 to 2 percent
Geomorphic position: Clay flats and swales on fan terraces
Parent material: Clayey alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly clay
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, rounded gravel, 0 to 60 percent rounded cobbles
Depth to a restrictive feature (duripan): 10 to 20 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 20 inches
Available water capacity: Very low (about 1.7 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7w-2
Land capability, nonirrigated: 7w-2
Storie index: 3 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 3 inches; gravelly clay
Bss1—3 to 8 inches; gravelly clay
Bss2—8 to 15 inches; gravelly clay
2Bkqm—15 inches; gravelly duripan

Characteristics of Tuscan Taxadjunct Gravelly Clay Loam

Slope: 0 to 2 percent
Geomorphic position: Mounds on fan terraces
Parent material: Clayey alluvium over cemented, cobbly and gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly clay loam
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, rounded gravel, 0 to 10 percent rounded cobbles
Depth to a restrictive feature (duripan): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 2 to 40 inches
Available water capacity: Low (about 3.7 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-8
Land capability, nonirrigated: 5w-8

Storie index: 15 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly clay loam
Bt1—2 to 5 inches; gravelly clay
Bt2—5 to 13 inches; gravelly clay
Bt3—13 to 23 inches; gravelly clay loam
Bt4—23 to 29 inches; very gravelly clay loam
2Bqm—29 inches; cemented, extremely cobbly duripan

Minor Components in Map Unit 609

Galt and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Clay flats on fan terraces
Hydric soil status: Hydric

Wafap and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on fan terraces
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on fan terraces
Hydric soil status: Hydric

Tuscan and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Mounds on fan terraces
Hydric soil status: Not hydric

614—Doemill-Jokerst complex, 0 to 3 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 160 to 520 feet (50 to 160 meters)
Mean annual precipitation: 25 to 29 inches (635 to 737 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Doemill gravelly loam—50 percent
Jokerst very cobbly loam—40 percent
Minor components—10 percent

Characteristics of Doemill Gravelly Loam

Slope: 0 to 3 percent
Geomorphic position: Mounds on ridgetops and strath terraces on volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 2 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 2 to 20 inches
Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6s-8
Land capability, nonirrigated: 6s-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; gravelly loam
Bt1—1 to 5 inches; gravelly loam
Bt2—5 to 9 inches; gravelly loam
Bt3—9 to 14 inches; gravelly loam
R—14 inches; bedrock

Characteristics of Jokerst Very Cobbly Loam

Slope: 0 to 3 percent
Geomorphic position: Swales on ridgetops and strath terraces on volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Very cobbly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 2 to 30 percent subangular cobbles, 3 to 50 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 2 to 10 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Frequent
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 10 inches
Available water capacity: Very low (about 0.4 inch)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8

Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; very cobbly loam
Bt—1 to 4 inches; gravelly loam
R—4 inches; bedrock

Minor Components in Map Unit 614

Rock outcrop
Composition: 5 percent
Slope: 0 to 3 percent
Geomorphic position: Ridgetops and strath terraces on volcanic ridges
Hydric soil status: Not hydric

Lithic Xerorthents and similar soils
Composition: 3 percent
Slope: 0 to 3 percent
Geomorphic position: Ridgetops and strath terraces on volcanic ridges
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on ridgetops and strath terraces on volcanic ridges
Hydric soil status: Hydric

615—Doemill-Jokerst complex, 3 to 8 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 160 to 1,000 feet (50 to 305 meters)
Mean annual precipitation: 25 to 29 inches (635 to 737 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Doemill gravelly loam—50 percent
Jokerst very cobbly loam—40 percent
Minor components—10 percent

Characteristics of Doemill Gravelly Loam

Slope: 3 to 8 percent
Geomorphic position: Mounds on ridgetops and strath terraces on volcanic ridges (fig. 26)
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 2 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 2 to 20 inches
Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6e-8
Land capability, nonirrigated: 6e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; gravelly loam
Bt1—1 to 5 inches; gravelly loam
Bt2—5 to 9 inches; gravelly loam
Bt3—9 to 14 inches; gravelly loam
R—14 inches; bedrock

Characteristics of Jokerst Very Cobbly Loam

Slope: 3 to 8 percent
Geomorphic position: Swales on ridgetops and strath terraces on volcanic ridges (fig. 26)
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs

Figure 26.—A typical area of Doemill-Jokerst complex, 3 to 8 percent slopes, showing mound and swale microtopography. Highway 99 is in the background. (Photo by Zeke Lunder)

Texture of the surface layer: Very cobbly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 2 to 30 percent subangular cobbles, 3 to 50 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 2 to 10 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Frequent
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 10 inches
Available water capacity: Very low (about 0.4 inch)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; very cobbly loam
Bt—1 to 4 inches; gravelly loam
R—4 inches; bedrock

Minor Components in Map Unit 615

Rock outcrop
Composition: 6 percent
Slope: 3 to 8 percent
Geomorphic position: Ridgetops and strath terraces on volcanic ridges
Hydric soil status: Not hydric

Lithic Xerorthents and similar soils
Composition: 3 percent
Slope: 3 to 8 percent
Geomorphic position: Ridgetops and strath terraces on volcanic ridges
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on ridgetops and strath terraces on volcanic ridges
Hydric soil status: Hydric

616—Jokerst-Doemill-Typic Haploxeralfs complex, 8 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Livestock grazing, wildlife habitat, homesite development, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 160 to 1,115 feet (50 to 341 meters)
Mean annual precipitation: 25 to 29 inches (635 to 737 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Jokerst very cobbly loam—35 percent
Doemill gravelly loam—35 percent
Typic Haploxeralfs gravelly loam—15 percent
Minor components—15 percent

Characteristics of Jokerst Very Cobbly Loam

Slope: 8 to 15 percent
Geomorphic position: Shoulder slopes and backslopes on volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Very cobbly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 2 to 30 percent subangular cobbles, 3 to 50 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 2 to 10 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 0 to 10 inches
Available water capacity: Very low (about 0.4 inch)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; very cobbly loam
Bt—1 to 4 inches; gravelly loam
R—4 inches; bedrock

Characteristics of Doemill Gravelly Loam

Slope: 8 to 15 percent
Geomorphic position: Shoulder slopes and backslopes on volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 2 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 4 to 20 inches

Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6e-8
Land capability, nonirrigated: 6e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; gravelly loam
Bt1—1 to 5 inches; gravelly loam
Bt2—5 to 9 inches; gravelly loam
Bt3—9 to 14 inches; gravelly loam
R—14 inches; bedrock

Characteristics of Typic Haploxeralfs Gravelly Loam

Slope: 8 to 15 percent
Geomorphic position: Shoulder slopes and backslopes on volcanic ridges
Parent material: Loamy colluvium derived from volcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders
Depth to a restrictive feature: 20 to 60 inches to lithic bedrock; 20 to 60 inches to paralithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 8 inches; gravelly clay loam
Bt2—8 to 16 inches; very gravelly clay loam
Bt3—16 to 27 inches; very gravelly clay loam
Bt4—27 to 40 inches; very gravelly clay loam
2Cr—40 inches; bedrock

Minor Components in Map Unit 616

Rock outcrop
Composition: 10 percent
Slope: 8 to 15 percent

Geomorphic position: Shoulder slopes and backslopes on volcanic ridges
Hydric soil status: Not hydric

Lithic Xerorthents and similar soils
Composition: 5 percent
Slope: 8 to 15 percent
Geomorphic position: Shoulder slopes and backslopes on volcanic ridges
Hydric soil status: Not hydric

617—Jokerst-Doemill-Typic Haploxeralfs complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 255 to 800 feet (79 to 244 meters)
Mean annual precipitation: 25 to 29 inches (635 to 737 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Doemill gravelly loam—35 percent
Jokerst very cobbly loam—30 percent
Typic Haploxeralfs gravelly loam—20 percent
Minor components—15 percent

Characteristics of Doemill Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 2 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 6 to 20 inches
Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6e-8
Land capability, nonirrigated: 6e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; gravelly loam
Bt1—1 to 5 inches; gravelly loam
Bt2—5 to 9 inches; gravelly loam
Bt3—9 to 14 inches; gravelly loam
R—14 inches; bedrock

Characteristics of Jokerst Very Cobbly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Very cobbly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 2 to 30 percent subangular cobbles, 3 to 50 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 2 to 10 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 0 to 10 inches
Available water capacity: Very low (about 0.4 inch)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; very cobbly loam
Bt—1 to 4 inches; gravelly loam
R—4 inches; bedrock

Characteristics of Typic Haploxeralfs Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Loamy colluvium derived from volcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, whiteleaf manzanita, buckbrush, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders
Depth to a restrictive feature: 20 to 60 inches to lithic bedrock; 20 to 60 inches to paralithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed

Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 8 inches; gravelly clay loam
Bt2—8 to 16 inches; very gravelly clay loam
Bt3—16 to 27 inches; very gravelly clay loam
Bt4—27 to 40 inches; very gravelly clay loam
2Cr—40 inches; bedrock

Minor Components in Map Unit 617

Rock outcrop
Composition: 10 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Lithic Xerorthents and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

619—Carhart taxadjunct, 0 to 2 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 255 to 530 feet (79 to 162 meters)
Mean annual precipitation: 26 to 29 inches (660 to 737 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Carhart taxadjunct clay—90 percent
Minor components—10 percent

Characteristics of Carhart Taxadjunct Clay

Slope: 0 to 2 percent
Geomorphic position: Clay basins on strath terraces
Parent material: Clayey alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Clay

Percentage of the surface covered by rock fragments: 0 to 10 percent fine, subrounded gravel, 5 to 30 percent subrounded cobbles, 0 to 20 percent subrounded stones, 0 to 3 percent subrounded boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Very low (about 2.3 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 4 inches; clay
Bss1—4 to 11 inches; gravelly clay
Bss2—11 to 17 inches; clay
2R—17 inches; bedrock

Minor Components in Map Unit 619

Carhart and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Clay basins on strath terraces
Hydric soil status: Hydric

Anita soils with a gravelly duripan and similar soils
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Clay basins on strath terraces
Hydric soil status: Hydric

Soils that are frequently ponded for long periods
Composition: 2 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools in clay basins on strath terraces
Hydric soil status: Hydric

Rock outcrop
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Strath terraces
Hydric soil status: Not hydric

620—Doemill-Jokerst-Ultic Haploxeralfs, thermic, complex, 3 to 8 percent slopes

Map Unit Setting

General location: North-central Butte County

Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 400 to 1,695 feet (122 to 518 meters)
Mean annual precipitation: 28 to 40 inches (711 to 1,016 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 255 to 260 days

Map Unit Composition

Doemill gravelly loam—40 percent
Jokerst very cobbly loam—25 percent
Ultic Haploxeralfs, thermic, gravelly loam—20 percent
Minor components—15 percent

Characteristics of Doemill Gravelly Loam

Slope: 3 to 8 percent
Geomorphic position: The top of volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs, blue oak, and buckbrush
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 2 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 2 to 20 inches
Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6e-8
Land capability, nonirrigated: 6e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; gravelly loam
Bt1—1 to 5 inches; gravelly loam
Bt2—5 to 9 inches; gravelly loam
Bt3—9 to 14 inches; gravelly loam
R—14 inches; bedrock

Characteristics of Jokerst Very Cobbly Loam

Slope: 3 to 8 percent
Geomorphic position: The top of volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Very cobbly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 2 to 30 percent subangular cobbles, 3 to 50 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 2 to 10 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 10 inches
Available water capacity: Very low (about 0.4 inch)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; very cobbly loam
Bt—1 to 4 inches; gravelly loam
R—4 inches; bedrock

Characteristics of Ultic Haploxeralfs, Thermic, Gravelly Loam

Slope: 3 to 8 percent
Geomorphic position: The top of volcanic ridges
Parent material: Loamy residuum weathered from volcanic rocks
Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, buckbrush, whiteleaf manzanita, and Pacific poison oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 5 to 20 percent fine, subangular gravel, 0 to 80 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature: 20 to 40 inches to lithic bedrock; 20 to 40 inches to paralithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 18 to 40 inches
Available water capacity: Low (about 3.0 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-8
Land capability, nonirrigated: 4e-8
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 6 inches; very cobbly clay loam
Bt2—6 to 13 inches; very cobbly clay loam
Bt3—13 to 21 inches; very cobbly clay loam
Bt4—21 to 31 inches; very cobbly clay loam
R—31 inches; bedrock

Minor Components in Map Unit 620

Rock outcrop
Composition: 10 percent
Slope: 3 to 8 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Lithic Xerorthents and similar soils
Composition: 5 percent
Slope: 3 to 8 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

621—Doemill-Jokerst-Ultic Haploxeralfs, thermic, complex, 8 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 400 to 1,695 feet (122 to 518 meters)
Mean annual precipitation: 28 to 40 inches (711 to 1,016 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 255 to 260 days

Map Unit Composition

Doemill gravelly loam—30 percent
Jokerst very cobbly loam—30 percent
Ultic Haploxeralfs, thermic, gravelly loam—20 percent
Minor components—20 percent

Characteristics of Doemill Gravelly Loam

Slope: 8 to 15 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs, blue oak, and buckbrush
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 2 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 4 to 20 inches
Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6e-8

Land capability, nonirrigated: 6e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; gravelly loam
Bt1—1 to 5 inches; gravelly loam
Bt2—5 to 9 inches; gravelly loam
Bt3—9 to 14 inches; gravelly loam
R—14 inches; bedrock

Characteristics of Jokerst Very Cobbly Loam

Slope: 8 to 15 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs and blue oak
Texture of the surface layer: Very cobbly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 2 to 30 percent subangular cobbles, 3 to 50 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 2 to 10 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 0 to 10 inches
Available water capacity: Very low (about 0.4 inch)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; very cobbly loam
Bt—1 to 4 inches; gravelly loam
R—4 inches; bedrock

Characteristics of Ultic Haploxeralfs, Thermic, Gravelly Loam

Slope: 8 to 15 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Parent material: Loamy residuum weathered from volcanic rocks
Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, interior live oak, buckbrush, whiteleaf manzanita, and Pacific poison oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 5 to 20 percent fine, subangular gravel, 0 to 80 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature: 20 to 40 inches to lithic bedrock; 20 to 40 inches to paralithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 19 to 40 inches
Available water capacity: Low (about 3.0 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-8
Land capability, nonirrigated: 4e-8
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 6 inches; very cobbly clay loam
Bt2—6 to 13 inches; very cobbly clay loam
Bt3—13 to 21 inches; very cobbly clay loam
Bt4—21 to 31 inches; very cobbly clay loam
R—31 inches; bedrock

Minor Components in Map Unit 621

Rock outcrop
Composition: 12 percent
Slope: 8 to 15 percent
Geomorphic position: Shoulder slopes on volcanic ridges
Hydric soil status: Not hydric

Lithic Xerorthents and similar soils
Composition: 8 percent
Slope: 8 to 15 percent
Geomorphic position: Shoulder slopes on volcanic ridges
Hydric soil status: Not hydric

622—Xerorthents, shallow-Typic Haploxeralfs-Rock outcrop, cliffs, complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 200 to 1,495 feet (61 to 457 meters)
Mean annual precipitation: 26 to 38 inches (660 to 965 millimeters)
Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Xerorthents, shallow—40 percent
Typic Haploxeralfs gravelly loam—30 percent
Rock outcrop (mudflow-breccia cliffs)—15 percent
Minor components—15 percent

Characteristics of Xerorthents, Shallow

Slope: 15 to 30 percent
Geomorphic position: Side slopes in canyons
Parent material: Loamy residuum and/or colluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs, buckbrush, and blue oak
Texture of the surface layer: Gravelly clay loam
Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 40 percent subangular stones, 0 to 40 percent subangular boulders
Depth to a restrictive feature: 2 to 20 inches to paralithic bedrock; 2 to 20 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.1 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; gravelly clay loam
Bt1—2 to 5 inches; gravelly clay loam
Bt2—5 to 8 inches; very cobbly clay loam
2R—8 inches; bedrock

Characteristics of Typic Haploxeralfs Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes in canyons
Parent material: Loamy residuum and/or colluvium derived from volcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, buckbrush, manzanita, Pacific poison oak, toyon, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders
Depth to a restrictive feature: 20 to 60 inches to paralithic bedrock; 20 to 60 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 8 inches; gravelly clay loam
Bt2—8 to 16 inches; very gravelly clay loam
Bt3—16 to 27 inches; very gravelly clay loam
Bt4—27 to 40 inches; very gravelly clay loam
2Cr—40 inches; bedrock

Characteristics of Rock Outcrop (Mudflow-Breccia Cliffs)

Slope: 15 to 200 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 622

Rock outcrop
Composition: 8 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Aquic Durixeralfs and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Drainageways on side slopes in canyons
Hydric soil status: Hydric

623—Xerorthents, shallow-Typic Haploxeralfs-Rock outcrop, cliffs, complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 295 to 1,495 feet (91 to 457 meters)
Mean annual precipitation: 26 to 38 inches (660 to 965 millimeters)
Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Xerorthents, shallow—40 percent
Typic Haploxeralfs gravelly loam—25 percent
Rock outcrop (mudflow-breccia cliffs)—20 percent
Minor components—15 percent

Characteristics of Xerorthents, Shallow

Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Parent material: Loamy residuum and/or colluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs, buckbrush, and blue oak
Texture of the surface layer: Gravelly clay loam
Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 40 percent subangular stones, 0 to 40 percent subangular boulders
Depth to a restrictive feature: 2 to 20 inches to paralithic bedrock; 2 to 20 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.1 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; gravelly clay loam
Bt1—2 to 5 inches; gravelly clay loam
Bt2—5 to 8 inches; very cobbly clay loam
2R—8 inches; bedrock

Characteristics of Typic Haploxeralfs Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Parent material: Loamy residuum and/or colluvium derived from volcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, buckbrush, manzanita, Pacific poison oak, toyon, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders
Depth to a restrictive feature: 20 to 60 inches to paralithic bedrock; 20 to 60 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 8 inches; gravelly clay loam
Bt2—8 to 16 inches; very gravelly clay loam
Bt3—16 to 27 inches; very gravelly clay loam
Bt4—27 to 40 inches; very gravelly clay loam
2Cr—40 inches; bedrock

Characteristics of Rock Outcrop (Mudflow-Breccia Cliffs)

Slope: 30 to 200 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 623

Rock outcrop
Composition: 10 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Aquic Durixeralfs and similar soils
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Drainageways on backslopes in canyons
Hydric soil status: Hydric

624—Ultic Haploxeralfs, mesic-Rockstripe complex, 2 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 895 to 2,200 feet (274 to 671 meters)
Mean annual precipitation: 35 to 55 inches (889 to 1,397 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 235 to 260 days

Map Unit Composition

Ultic Haploxeralfs, mesic, gravelly loam—60 percent
Rockstripe very gravelly loam—25 percent
Minor components—15 percent

Characteristics of Ultic Haploxeralfs, Mesic, Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Foothill pine, California black oak, whiteleaf manzanita, buckbrush, scrub oak, Pacific poison oak, toyon, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature: 20 to 60 inches to lithic bedrock; 20 to 60 inches to paralithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-3
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; cobbly loam
Bt2—9 to 23 inches; very stony clay loam
Bt3—23 to 32 inches; very cobbly clay loam
Bt4—32 to 42 inches; extremely stony clay loam
Cr—42 inches; bedrock

Characteristics of Rockstripe Very Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs, buckbrush, whiteleaf manzanita, Pacific poison oak, and foothill pine
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 5 to 30 percent medium,

subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 2 to 10 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; very gravelly loam
Bt1—2 to 6 inches; very cobbly loam
Bt2—6 to 9 inches; cobbly loam
R—9 inches; bedrock

Minor Components in Map Unit 624

Rock outcrop
Composition: 8 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Paradiso and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Schott and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Lithic Dystroxerepts and similar soils
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

625—Ultic Haploxeralfs, mesic-Rockstripe complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 495 to 2,595 feet (152 to 792 meters)
Mean annual precipitation: 35 to 62 inches (889 to 1,575 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 225 to 260 days

Map Unit Composition

Ultic Haploxeralfs, mesic, gravelly loam—50 percent
Rockstripe very gravelly loam—35 percent
Minor components—15 percent

Characteristics of Ultic Haploxeralfs, Mesic, Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Parent material: Loamy colluvium and/or residuum weathered from volcanic breccia
Observed vegetation: Foothill pine, California black oak, whiteleaf manzanita, buckbrush, scrub oak, Pacific poison oak, toyon, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature: 20 to 60 inches to paralithic bedrock; 20 to 60 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; cobbly loam
Bt2—9 to 23 inches; very stony clay loam
Bt3—23 to 32 inches; very cobbly clay loam
Bt4—32 to 42 inches; extremely stony clay loam
Cr—42 inches; bedrock

Characteristics of Rockstripe Very Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs, buckbrush, whiteleaf manzanita, Pacific poison oak, and foothill pine
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 5 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 2 to 10 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; very gravelly loam
Bt1—2 to 6 inches; very cobbly loam
Bt2—6 to 9 inches; cobbly loam
R—9 inches; bedrock

Minor Components in Map Unit 625

Rock outcrop
Composition: 10 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

Paradiso and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

Schott and similar soils
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

Lithic Dystroxerepts and similar soils
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

626—Ultic Haploxeralfs-Rockstripe-Rock outcrop, cliffs, complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 600 to 2,495 feet (183 to 762 meters)
Mean annual precipitation: 30 to 60 inches (762 to 1,524 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 200 to 260 days

Map Unit Composition

Ultic Haploxeralfs gravelly loam—40 percent
Rockstripe very gravelly loam—35 percent
Rock outcrop (mudflow-breccia cliffs)—15 percent
Minor components—10 percent

Characteristics of Ultic Haploxeralfs Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Parent material: Loamy colluvium derived from volcanic rocks
Observed vegetation: Foothill pine, live oak, California black oak, scrub oak, Pacific poison oak, California laurel, whiteleaf manzanita, toyon, and deerbrush
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 25 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature: 20 to 60 inches to paralithic bedrock; 20 to 60 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 4 inches; gravelly loam
Bt1—4 to 10 inches; gravelly loam
Bt2—10 to 18 inches; gravelly clay loam
Bt3—18 to 35 inches; gravelly clay loam
Bt4—35 to 48 inches; gravelly clay
Crt—48 inches; bedrock

Characteristics of Rockstripe Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs, buckbrush, whiteleaf manzanita, Pacific poison oak, and foothill pine
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 5 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 2 to 10 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; very gravelly loam
Bt1—2 to 6 inches; very cobbly loam
Bt2—6 to 9 inches; cobbly loam
R—9 inches; bedrock

Characteristics of Rock Outcrop (Mudflow-Breccia Cliffs)

Slope: 30 to 200 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 626

Tusccoll and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Schott and similar soils
Composition: 3 percent

Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Lithic Dystroxerepts and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

627—Ultic Haploxeralfs-Rockstripe-Rock outcrop, cliffs, complex, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 245 to 2,595 feet (76 to 792 meters)
Mean annual precipitation: 26 to 55 inches (660 to 1,397 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 200 to 260 days

Map Unit Composition

Ultic Haploxeralfs gravelly loam—40 percent
Rockstripe very gravelly loam—35 percent
Rock outcrop (mudflow-breccia cliffs)—15 percent
Minor components—10 percent

Characteristics of Ultic Haploxeralfs Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Loamy colluvium derived from volcanic rocks
Observed vegetation: Foothill pine, live oak, California black oak, scrub oak, Pacific poison oak, California laurel, whiteleaf manzanita, toyon, and deerbrush
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 25 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature: 20 to 60 inches to paralithic bedrock; 20 to 60 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 7.5 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 4 inches; gravelly loam
Bt1—4 to 10 inches; gravelly loam
Bt2—10 to 18 inches; gravelly clay loam
Bt3—18 to 35 inches; gravelly clay loam
Bt4—35 to 48 inches; gravelly clay
Crt—48 inches; bedrock

Characteristics of Rockstripe Very Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs, buckbrush, whiteleaf manzanita, Pacific poison oak, and foothill pine
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 5 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 2 to 10 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; very gravelly loam
Bt1—2 to 6 inches; very cobbly loam
Bt2—6 to 9 inches; cobbly loam
R—9 inches; bedrock

Characteristics of Rock Outcrop (Mudflow-Breccia Cliffs)

Slope: 50 to 200 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 627

Tusccoll and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Schott and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Lithic Dystroxerepts and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

628—Rockstripe-Ultic Haploxeralfs-Rock outcrop, cliffs, complex, 70 to 100 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 295 to 2,400 feet (91 to 732 meters)
Mean annual precipitation: 26 to 60 inches (660 to 1,524 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 215 to 260 days

Map Unit Composition

Rockstripe very gravelly loam—40 percent
Ultic Haploxeralfs gravelly loam—35 percent
Rock outcrop (mudflow-breccia cliffs)—20 percent
Minor components—5 percent

Characteristics of Rockstripe Very Gravelly Loam

Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Annual grasses and forbs, buckbrush, whiteleaf manzanita, Pacific poison oak, and foothill pine
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 5 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders

Depth to a restrictive feature (lithic bedrock): 2 to 10 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.1 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; very gravelly loam
Bt1—2 to 6 inches; very cobbly loam
Bt2—6 to 9 inches; cobbly loam
R—9 inches; bedrock

Characteristics of Ultic Haploxeralfs Gravelly Loam

Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Parent material: Loamy colluvium derived from volcanic rocks
Observed vegetation: Foothill pine, live oak, California black oak, scrub oak, Pacific poison oak, California laurel, whiteleaf manzanita, toyon, and deerbrush
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 25 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature: 20 to 60 inches to paralithic bedrock; 20 to 60 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 4 inches; gravelly loam
Bt1—4 to 10 inches; gravelly loam
Bt2—10 to 18 inches; gravelly clay loam
Bt3—18 to 35 inches; gravelly clay loam

Bt4—35 to 48 inches; gravelly clay
Crt—48 inches; bedrock

Characteristics of Rock Outcrop (Mudflow-Breccia Cliffs)

Slope: 70 to 200 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 628

Tusccoll and similar soils
Composition: 3 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils
Composition: 1 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Lithic Dystroxerepts and similar soils
Composition: 1 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

629—Slideland gravelly loam, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 415 to 1,875 feet (128 to 573 meters)
Mean annual precipitation: 30 to 60 inches (762 to 1,524 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 215 to 260 days

Map Unit Composition

Slideland gravelly loam—80 percent
Minor components—20 percent

Characteristics of Slideland Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Parent material: Stream-worked, fine-loamy colluvium derived from volcanic and sedimentary rocks
Observed vegetation: Annual grasses and forbs, California black oak, bigleaf maple, canyon live oak, valley oak, ponderosa pine, foothill pine, blue oak, whiteleaf manzanita, toyon, California laurel, deerbrush, and California buckthorn
Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 9 inches; gravelly loam
Bt2—9 to 14 inches; gravelly clay loam
Bt3—14 to 21 inches; gravelly clay loam
Bt4—21 to 28 inches; gravelly clay loam
Bt5—28 to 38 inches; gravelly clay loam
Bt6—38 to 51 inches; gravelly clay loam
Bt7—51 to 69 inches; very cobbly clay loam
Bt8—69 to 80 inches; very cobbly clay loam

Minor Components in Map Unit 629

Chinacamp and similar soils
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Fine textured soils
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Soils that are less than 60 inches deep to bedrock
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Coalcanyon taxadjunct and similar soils
Composition: 2 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Haploxeralfs, terrace, and similar soils
Composition: 2 percent
Slope: 3 to 6 percent
Geomorphic position: Stream terraces in canyons
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 2 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs gravelly loam and similar soils
Composition: 2 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Typic Haploxeralfs and similar soils
Composition: 2 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Seeps
Composition: 1 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Hydric

630—Slideland gravelly loam, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 600 to 1,860 feet (183 to 567 meters)
Mean annual precipitation: 41 to 60 inches (1,041 to 1,524 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 215 to 240 days

Map Unit Composition

Slideland gravelly loam—80 percent
Minor components—20 percent

Characteristics of Slideland Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Parent material: Stream-worked, fine-loamy colluvium derived from volcanic and sedimentary rocks
Observed vegetation: Annual grasses and forbs, California black oak, bigleaf maple, canyon live oak, valley oak, ponderosa pine, foothill pine, blue oak, whiteleaf manzanita, toyon, California laurel, deerbrush, and California buckthorn
Texture of the surface layer: Gravelly loam

Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 9 inches; gravelly loam
Bt2—9 to 14 inches; gravelly clay loam
Bt3—14 to 21 inches; gravelly clay loam
Bt4—21 to 28 inches; gravelly clay loam
Bt5—28 to 38 inches; gravelly clay loam
Bt6—38 to 51 inches; gravelly clay loam
Bt7—51 to 69 inches; very cobbly clay loam
Bt8—69 to 80 inches; very cobbly clay loam

Minor Components in Map Unit 630

Chinacamp and similar soils
Composition: 6 percent
Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Fine textured soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Soils that are less than 60 inches deep to bedrock
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Coalcanyon taxadjunct and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 2 percent

Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs gravelly loam and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Typic Haploxeralfs and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

631—Slideland gravelly loam, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 560 to 2,000 feet (171 to 610 meters)
Mean annual precipitation: 37 to 60 inches (940 to 1,524 millimeters)
Mean annual air temperature: 55 to 59 degrees F (13 to 15 degrees C)
Frost-free period: 215 to 255 days

Map Unit Composition

Slideland gravelly loam—80 percent
Minor components—20 percent

Characteristics of Slideland Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on benches in canyons
Parent material: Stream-worked, fine-loamy colluvium derived from volcanic and sedimentary rocks
Observed vegetation: Annual grasses and forbs, California black oak, bigleaf maple, canyon live oak, valley oak, ponderosa pine, foothill pine, blue oak, whiteleaf manzanita, toyon, California laurel, deerbrush, and California buckthorn
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 9.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 9 inches; gravelly loam
Bt2—9 to 14 inches; gravelly clay loam
Bt3—14 to 21 inches; gravelly clay loam
Bt4—21 to 28 inches; gravelly clay loam
Bt5—28 to 38 inches; gravelly clay loam
Bt6—38 to 51 inches; gravelly clay loam
Bt7—51 to 69 inches; very cobbly clay loam
Bt8—69 to 80 inches; very cobbly clay loam

Minor Components in Map Unit 631

Chinacamp and similar soils
Composition: 8 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on benches in canyons
Hydric soil status: Not hydric

Soils that are less than 60 inches deep to bedrock
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on benches in canyons
Hydric soil status: Not hydric

Fine textured soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on benches in canyons
Hydric soil status: Not hydric

Coalcanyon taxadjunct and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on benches in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs gravelly loam and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on benches in canyons
Hydric soil status: Not hydric

Typic Haploxeralfs and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on benches in canyons
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 1 percent
Slope: 30 to 50 percent

Geomorphic position: Side slopes on benches in canyons
Hydric soil status: Not hydric

632—Ultic Haploxeralfs, conglomerate, complex, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Areas of marine conglomerate exposed in Southern Cascade foothills
Elevation: 695 to 1,800 feet (213 to 549 meters)
Mean annual precipitation: 37 to 65 inches (940 to 1,651 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 190 to 260 days

Map Unit Composition

Ultic Haploxeralfs, conglomerate, very deep—50 percent
Ultic Haploxeralfs, conglomerate, moderately deep—40 percent
Minor components—10 percent

Characteristics of Ultic Haploxeralfs, Conglomerate, Very Deep

Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Parent material: Gravelly residuum weathered from marine conglomerate
Observed vegetation: California black oak, foothill pine, canyon live oak, blue oak, Pacific poison oak, toyon, scrub oak, manzanita, annual grasses and forbs, and scattered ponderosa pine and Douglas-fir
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, rounded gravel, 0 to 10 percent rounded cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 6.9 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 3e-1
- *Land capability, nonirrigated:* 3e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 2 inches; slightly decomposed plant material
- A—2 to 6 inches; gravelly clay loam

Bt1—6 to 10 inches; gravelly clay loam
Bt2—10 to 17 inches; clay loam
Bt3—17 to 28 inches; cobbly clay loam
Bt4—28 to 40 inches; very cobbly clay loam
2Bt5—40 to 50 inches; very gravelly clay
2Bt6—50 to 71 inches; very gravelly sandy clay loam
2Bt7—71 to 84 inches; very gravelly sandy clay loam

Characteristics of Ultic Haploxeralfs, Conglomerate, Moderately Deep

Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Parent material: Gravelly residuum weathered from marine conglomerate
Observed vegetation: Canyon live oak, blue oak, manzanita, toyon, foothill pine, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 30 percent medium, rounded gravel, 0 to 15 percent rounded cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 5 inches; very gravelly loam
Bt1—5 to 10 inches; very gravelly clay loam
Bt2—10 to 25 inches; extremely gravelly sandy clay loam
Cr—25 inches; bedrock

Minor Components in Map Unit 632

Soils that are 40 to 60 inches deep to bedrock
Composition: 8 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, and similar soils
Composition: 2 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

633—Ultic Haploxeralfs, conglomerate, complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Areas of marine conglomerate exposed in Southern Cascade foothills
Elevation: 695 to 1,800 feet (213 to 549 meters)
Mean annual precipitation: 37 to 65 inches (940 to 1,651 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 190 to 260 days

Map Unit Composition

Ultic Haploxeralfs, conglomerate, very deep—60 percent
Ultic Haploxeralfs, conglomerate, moderately deep—30 percent
Minor components—10 percent

Characteristics of Ultic Haploxeralfs, Conglomerate, Very Deep

Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Parent material: Gravelly colluvium derived from marine conglomerate
Observed vegetation: California black oak, foothill pine, canyon live oak, blue oak, Pacific poison oak, toyon, scrub oak, manzanita, annual grasses and forbs, and scattered ponderosa pine and Douglas-fir
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, rounded gravel, 0 to 10 percent rounded cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 6 inches; gravelly clay loam
Bt1—6 to 10 inches; gravelly clay loam
Bt2—10 to 17 inches; clay loam

Bt3—17 to 28 inches; cobbly clay loam
Bt4—28 to 40 inches; very cobbly clay loam
2Bt5—40 to 50 inches; very gravelly clay
2Bt6—50 to 71 inches; very gravelly sandy clay loam
2Bt7—71 to 84 inches; very gravelly sandy clay loam

Characteristics of Ultic Haploxeralfs, Conglomerate, Moderately Deep

Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Parent material: Gravelly residuum weathered from marine conglomerate
Observed vegetation: Canyon live oak, blue oak, manzanita, toyon, foothill pine, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 30 percent medium, rounded gravel, 0 to 15 percent rounded cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 5 inches; very gravelly loam
Bt1—5 to 10 inches; very gravelly clay loam
Bt2—10 to 25 inches; extremely gravelly sandy clay loam
Cr—25 inches; bedrock

Minor Components in Map Unit 633

Soils that are 40 to 60 inches deep to bedrock
Composition: 8 percent
Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

634—Ultic Haploxeralfs, conglomerate, complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Areas of marine conglomerate exposed in Southern Cascade foothills
Elevation: 695 to 1,695 feet (213 to 518 meters)
Mean annual precipitation: 37 to 65 inches (940 to 1,651 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 190 to 260 days

Map Unit Composition

Ultic Haploxeralfs, conglomerate, very deep—60 percent
Ultic Haploxeralfs, conglomerate, moderately deep—30 percent
Minor components—10 percent

Characteristics of Ultic Haploxeralfs, Conglomerate, Very Deep

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Parent material: Gravelly colluvium derived from marine conglomerate
Observed vegetation: California black oak, foothill pine, canyon live oak, blue oak, Pacific poison oak, toyon, scrub oak, manzanita, annual grasses and forbs, and scattered ponderosa pine and Douglas-fir
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, rounded gravel, 0 to 10 percent rounded cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 6 inches; gravelly clay loam
Bt1—6 to 10 inches; gravelly clay loam
Bt2—10 to 17 inches; clay loam
Bt3—17 to 28 inches; cobbly clay loam
Bt4—28 to 40 inches; very cobbly clay loam
2Bt5—40 to 50 inches; very gravelly clay

2Bt6—50 to 71 inches; very gravelly sandy clay loam
2Bt7—71 to 84 inches; very gravelly sandy clay loam

Characteristics of Ultic Haploxeralfs, Conglomerate, Moderately Deep

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Parent material: Gravelly colluvium and/or residuum weathered from marine conglomerate
Observed vegetation: Canyon live oak, blue oak, manzanita, toyon, foothill pine, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 30 percent medium, rounded gravel, 0 to 15 percent rounded cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Storie index: 0 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 5 inches; very gravelly loam
Bt1—5 to 10 inches; very gravelly clay loam
Bt2—10 to 25 inches; extremely gravelly sandy clay loam
Cr—25 inches; bedrock

Minor Components in Map Unit 634

Soils that are 40 to 60 inches deep to bedrock
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Tusccoll and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

635—Ultic Haploxeralfs, conglomerate, complex, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Areas of marine conglomerate exposed in Southern Cascade foothills
Elevation: 1,000 to 1,695 feet (305 to 518 meters)
Mean annual precipitation: 55 to 65 inches (1,397 to 1,651 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 190 to 230 days

Map Unit Composition

Ultic Haploxeralfs, conglomerate, very deep—50 percent
Ultic Haploxeralfs, conglomerate, moderately deep—40 percent
Minor components—10 percent

Characteristics of Ultic Haploxeralfs, Conglomerate, Very Deep

Slope: 50 to 70 percent
Geomorphic position: Drainageways in canyons
Parent material: Gravelly colluvium derived from marine conglomerate
Observed vegetation: California black oak, foothill pine, canyon live oak, blue oak, Pacific poison oak, toyon, scrub oak, manzanita, annual grasses and forbs, and scattered ponderosa pine and Douglas-fir
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, rounded gravel, 0 to 10 percent rounded cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 6 inches; gravelly clay loam
Bt1—6 to 10 inches; gravelly clay loam
Bt2—10 to 17 inches; clay loam
Bt3—17 to 28 inches; cobbly clay loam
Bt4—28 to 40 inches; very cobbly clay loam
2Bt5—40 to 50 inches; very gravelly clay

2Bt6—50 to 71 inches; very gravelly sandy clay loam
2Bt7—71 to 84 inches; very gravelly sandy clay loam

Characteristics of Ultic Haploxeralfs, Conglomerate, Moderately Deep

Slope: 50 to 70 percent
Geomorphic position: Drainageways in canyons
Parent material: Gravelly colluvium and/or residuum weathered from marine conglomerate
Observed vegetation: Canyon live oak, blue oak, manzanita, toyon, foothill pine, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 30 percent medium, rounded gravel, 0 to 15 percent rounded cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 5 inches; very gravelly loam
Bt1—5 to 10 inches; very gravelly clay loam
Bt2—10 to 25 inches; extremely gravelly sandy clay loam
Cr—25 inches; bedrock

Minor Components in Map Unit 635

Tusccoll and similar soils
Composition: 6 percent
Slope: 50 to 70 percent
Geomorphic position: Drainageways in canyons
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Drainageways in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Drainageways in canyons
Hydric soil status: Not hydric

636—Ultic Haploxeralfs, conglomerate, complex, 70 to 100 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Areas of marine conglomerate exposed in Southern Cascade foothills
Elevation: 1,000 to 1,600 feet (305 to 488 meters)
Mean annual precipitation: 58 to 60 inches (1,473 to 1,524 millimeters)
Mean annual air temperature: 55 degrees F (13 degrees C)
Frost-free period: 215 days

Map Unit Composition

Ultic Haploxeralfs, conglomerate, moderately deep—50 percent
Ultic Haploxeralfs, conglomerate, very deep—40 percent
Minor components—10 percent

Characteristics of Ultic Haploxeralfs, Conglomerate, Moderately Deep

Slope: 70 to 100 percent
Geomorphic position: Ravines in canyons
Parent material: Gravelly colluvium and/or residuum weathered from marine conglomerate
Observed vegetation: Canyon live oak, blue oak, manzanita, toyon, foothill pine, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 30 percent medium, rounded gravel, 0 to 15 percent rounded cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very low (about 1.4 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 8
- *Land capability, nonirrigated:* 8
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 2 inches; slightly decomposed plant material
- A—2 to 5 inches; very gravelly loam
- Bt1—5 to 10 inches; very gravelly clay loam
- Bt2—10 to 25 inches; extremely gravelly sandy clay loam
- Cr—25 inches; bedrock

Characteristics of Ultic Haploxeralfs, Conglomerate, Very Deep

Slope: 70 to 100 percent
Geomorphic position: Ravines in canyons
Parent material: Gravelly colluvium derived from marine conglomerate
Observed vegetation: California black oak, foothill pine, canyon live oak, blue oak, Pacific poison oak, toyon, scrub oak, manzanita, annual grasses and forbs, and scattered ponderosa pine and Douglas-fir
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, rounded gravel, 0 to 10 percent rounded cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 6 inches; gravelly clay loam
Bt1—6 to 10 inches; gravelly clay loam
Bt2—10 to 17 inches; clay loam
Bt3—17 to 28 inches; cobbly clay loam
Bt4—28 to 40 inches; very cobbly clay loam
2Bt5—40 to 50 inches; very gravelly clay
2Bt6—50 to 71 inches; very gravelly sandy clay loam
2Bt7—71 to 84 inches; very gravelly sandy clay loam

Minor Components in Map Unit 636

Tusccoll and similar soils
Composition: 6 percent
Slope: 70 to 100 percent
Geomorphic position: Ravines in canyons
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 70 to 100 percent
Geomorphic position: Ravines in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, and similar soils
Composition: 2 percent
Slope: 70 to 100 percent

Geomorphic position: Ravines in canyons
Hydric soil status: Not hydric

637—Ultic Haploxeralfs, sandstone, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Areas of marine sandstone exposed in Southern Cascade foothills
Elevation: 1,000 to 1,475 feet (305 to 451 meters)
Mean annual precipitation: 58 inches (1,473 millimeters)
Mean annual air temperature: 55 degrees F (13 degrees C)
Frost-free period: 220 days

Map Unit Composition

Ultic Haploxeralfs, sandstone—80 percent
Minor components—20 percent

Characteristics of Ultic Haploxeralfs, Sandstone

Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Parent material: Sandy colluvium and/or residuum weathered from marine sandstone
Observed vegetation: Canyon live oak, blue oak, California black oak, foothill pine, manzanita, deerbrush, California laurel, Pacific poison oak, toyon, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent fine, subangular gravel, 0 to 5 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 2 inches; very fine sandy loam
Bt1—2 to 6 inches; very fine sandy loam
Bt2—6 to 11 inches; very fine sandy loam
Bt3—11 to 17 inches; very fine sandy loam

Bt4—17 to 24 inches; very fine sandy loam
2Bt5—24 to 32 inches; very gravelly very fine sandy loam
2Cr/Bt—32 to 53 inches; very gravelly sandy clay loam
2Cr1—53 to 65 inches; bedrock
2Cr2—65 inches; bedrock

Minor Components in Map Unit 637

Soils that are less than 40 inches deep to bedrock
Composition: 10 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Chinacamp and similar soils
Composition: 10 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

638—Ultic Haploxeralfs, sandstone, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Areas of marine sandstone exposed in Southern Cascade foothills
Elevation: 1,200 to 2,000 feet (366 to 610 meters)
Mean annual precipitation: 58 inches (1,473 millimeters)
Mean annual air temperature: 55 degrees F (13 degrees C)
Frost-free period: 220 days

Map Unit Composition

Ultic Haploxeralfs, sandstone—80 percent
Minor components—20 percent

Characteristics of Ultic Haploxeralfs, Sandstone

Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Parent material: Sandy colluvium and/or residuum weathered from marine sandstone
Observed vegetation: Canyon live oak, blue oak, California black oak, foothill pine, manzanita, deerbrush, California laurel, Pacific poison oak, toyon, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent fine, subangular gravel, 0 to 5 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed

Available water capacity: Low (about 4.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 2 inches; very fine sandy loam
Bt1—2 to 6 inches; very fine sandy loam
Bt2—6 to 11 inches; very fine sandy loam
Bt3—11 to 17 inches; very fine sandy loam
Bt4—17 to 24 inches; very fine sandy loam
2Bt5—24 to 32 inches; very gravelly very fine sandy loam
2Cr/Bt—32 to 53 inches; very gravelly sandy clay loam
2Cr1—53 to 65 inches; bedrock
2Cr2—65 inches; bedrock

Minor Components in Map Unit 638

Soils that are less than 40 inches deep to bedrock
Composition: 10 percent
Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Chinacamp and similar soils
Composition: 10 percent
Slope: 15 to 30 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

639—Ultic Haploxeralfs, sandstone, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Areas of marine sandstone exposed in Southern Cascade foothills
Elevation: 950 to 1,715 feet (290 to 524 meters)
Mean annual precipitation: 47 to 50 inches (1,194 to 1,270 millimeters)
Mean annual air temperature: 57 degrees F (14 degrees C)
Frost-free period: 235 to 240 days

Map Unit Composition

Ultic Haploxeralfs, sandstone—75 percent
Minor components—25 percent

Characteristics of Ultic Haploxeralfs, Sandstone

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Parent material: Sandy colluvium and/or residuum weathered from marine sandstone
Observed vegetation: Canyon live oak, blue oak, California black oak, foothill pine, manzanita, deerbrush, California laurel, Pacific poison oak, toyon, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent fine, subangular gravel, 0 to 5 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 2 inches; very fine sandy loam
Bt1—2 to 6 inches; very fine sandy loam
Bt2—6 to 11 inches; very fine sandy loam
Bt3—11 to 17 inches; very fine sandy loam
Bt4—17 to 24 inches; very fine sandy loam
2Bt5—24 to 32 inches; very gravelly very fine sandy loam
2Cr/Bt—32 to 53 inches; very gravelly sandy clay loam
2Cr1—53 to 65 inches; bedrock
2Cr2—65 inches; bedrock

Minor Components in Map Unit 639

Chinacamp and similar soils
Composition: 13 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Soils that are less than 40 inches deep to bedrock
Composition: 10 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

640—Ultic Haploxeralfs, sandstone, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Areas of marine sandstone exposed in Southern Cascade foothills
Elevation: 715 to 1,800 feet (219 to 549 meters)
Mean annual precipitation: 35 to 58 inches (889 to 1,473 millimeters)
Mean annual air temperature: 55 to 59 degrees F (13 to 15 degrees C)
Frost-free period: 220 to 250 days

Map Unit Composition

Ultic Haploxeralfs, sandstone—75 percent
Minor components—25 percent

Characteristics of Ultic Haploxeralfs, Sandstone

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Sandy colluvium and/or residuum weathered from marine sandstone
Observed vegetation: Canyon live oak, Douglas-fir, ponderosa pine, California black oak, foothill pine, manzanita, deerbrush, California laurel, Pacific poison oak, toyon, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent fine, subangular gravel, 0 to 5 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 2 inches; very fine sandy loam

Bt1—2 to 6 inches; very fine sandy loam
Bt2—6 to 11 inches; very fine sandy loam
Bt3—11 to 17 inches; very fine sandy loam
Bt4—17 to 24 inches; very fine sandy loam
2Bt5—24 to 32 inches; very gravelly very fine sandy loam
2Cr/Bt—32 to 53 inches; very gravelly sandy clay loam
2Cr1—53 to 65 inches; bedrock
2Cr2—65 inches; bedrock

Minor Components in Map Unit 640

Rock outcrop
Composition: 10 percent
Slope: 50 to 175 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Coalcanyon taxadjunct and similar soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are less than 40 inches deep to bedrock
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Chinacamp and similar soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

641—Ultic Haploxeralfs, sandstone, 70 to 100 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Areas of marine sandstone exposed in Southern Cascade foothills
Elevation: 600 to 1,800 feet (183 to 549 meters)
Mean annual precipitation: 50 to 58 inches (1,270 to 1,473 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 220 to 235 days

Map Unit Composition

Ultic Haploxeralfs, sandstone—75 percent
Minor components—25 percent

Characteristics of Ultic Haploxeralfs, Sandstone

Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons

Parent material: Sandy colluvium and/or residuum weathered from marine sandstone
Observed vegetation: Canyon live oak, Douglas-fir, ponderosa pine, California black oak, foothill pine, manzanita, deerbrush, California laurel, Pacific poison oak, toyon, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent fine, subangular gravel, 0 to 5 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 2 inches; very fine sandy loam
Bt1—2 to 6 inches; very fine sandy loam
Bt2—6 to 11 inches; very fine sandy loam
Bt3—11 to 17 inches; very fine sandy loam
Bt4—17 to 24 inches; very fine sandy loam
2Bt5—24 to 32 inches; very gravelly very fine sandy loam
2Cr/Bt—32 to 53 inches; very gravelly sandy clay loam
2Cr1—53 to 65 inches; bedrock
2Cr2—65 inches; bedrock

Minor Components in Map Unit 641

Rock outcrop
Composition: 10 percent
Slope: 70 to 175 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Coalcanyon taxadjunct and similar soils
Composition: 5 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are less than 40 inches deep to bedrock
Composition: 5 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Chinacamp and similar soils
Composition: 5 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

642—Chinacamp gravelly loam, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 340 to 1,100 feet (104 to 336 meters)
Mean annual precipitation: 29 to 50 inches (737 to 1,270 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 230 to 255 days

Map Unit Composition

Chinacamp gravelly loam—70 percent
Minor components—30 percent

Characteristics of Chinacamp Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Toeslopes in canyons
Parent material: Stony, fine-loamy colluvium derived from volcanic breccia
Observed vegetation: Canyon live oak, California black oak, blue oak, manzanita, bigleaf maple, California laurel, deerbrush, Pacific poison oak, foothill pine, valley oak, ponderosa pine, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent medium gravel, 0 to 20 percent cobbles, 0 to 30 percent stones, 0 to 15 percent boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 6.3 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Low

Interpretive groups
- *Land capability, irrigated:* 3e-1
- *Land capability, nonirrigated:* 3e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 1 inch; slightly decomposed plant material
- A—1 to 5 inches; gravelly loam
- Bt1—5 to 15 inches; gravelly clay loam
- Bt2—15 to 29 inches; gravelly clay loam

Bt3—29 to 38 inches; gravelly clay loam
Bt4—38 to 44 inches; gravelly clay loam
Bt5—44 to 61 inches; extremely stony clay loam
Bt6—61 to 72 inches; very stony clay loam

Minor Components in Map Unit 642

Clayey-skeletal soils
Composition: 6 percent
Slope: 3 to 15 percent
Geomorphic position: Toeslopes in canyons
Hydric soil status: Not hydric

Durixeralfs and similar soils
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Terrace remnants on toeslopes in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs gravelly loam and similar soils
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Toeslopes in canyons
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Toeslopes in canyons
Hydric soil status: Not hydric

Slideland and similar soils
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Toeslopes in canyons
Hydric soil status: Not hydric

Soils that have more than 10 percent boulders in the subsoil
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Areas along drainageways on toeslopes in canyons
Hydric soil status: Not hydric

Soils that have more than 30 percent stones in the subsoil
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Areas along drainageways on toeslopes in canyons
Hydric soil status: Not hydric

643—Chinacamp gravelly loam, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 295 to 1,800 feet (91 to 549 meters)

Mean annual precipitation: 30 to 57 inches (762 to 1,448 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 215 to 255 days

Map Unit Composition

Chinacamp gravelly loam—70 percent
Minor components—30 percent

Characteristics of Chinacamp Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Footslopes in canyons
Parent material: Stony, fine-loamy colluvium derived from volcanic breccia
Observed vegetation: Canyon live oak, California black oak, blue oak, manzanita, bigleaf maple, California laurel, deerbrush, Pacific poison oak, foothill pine, valley oak, ponderosa pine, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent medium gravel, 0 to 20 percent cobbles, 0 to 30 percent stones, 0 to 15 percent boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 5 inches; gravelly loam
Bt1—5 to 15 inches; gravelly clay loam
Bt2—15 to 29 inches; gravelly clay loam
Bt3—29 to 38 inches; gravelly clay loam
Bt4—38 to 44 inches; gravelly clay loam
Bt5—44 to 61 inches; extremely stony clay loam
Bt6—61 to 72 inches; very stony clay loam

Minor Components in Map Unit 643

Clayey-skeletal soils
Composition: 6 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs gravelly loam and similar soils
Composition: 6 percent
Slope: 15 to 30 percent

Geomorphic position: Footslopes in canyons
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 6 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes in canyons
Hydric soil status: Not hydric

Durixeralfs and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Terrace remnants on footslopes in canyons
Hydric soil status: Not hydric

Slideland and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Footslopes in canyons
Hydric soil status: Not hydric

Soils that have more than 10 percent boulders in the subsoil
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Areas along drainageways on footslopes in canyons
Hydric soil status: Not hydric

Soils that have more than 30 percent stones in the subsoil
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Areas along drainageways on footslopes in canyons
Hydric soil status: Not hydric

644—Chinacamp gravelly loam, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 415 to 2,000 feet (128 to 610 meters)
Mean annual precipitation: 30 to 57 inches (762 to 1,448 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 215 to 260 days

Map Unit Composition

Chinacamp gravelly loam—70 percent
Minor components—30 percent

Characteristics of Chinacamp Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Parent material: Stony, fine-loamy colluvium derived from volcanic breccia
Observed vegetation: Canyon live oak, California black oak, blue oak, manzanita, bigleaf maple, California laurel, deerbrush, Pacific poison oak, foothill pine, valley oak, ponderosa pine, and annual grasses and forbs

Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent medium gravel, 0 to 20 percent cobbles, 0 to 30 percent stones, 0 to 15 percent boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 5 inches; gravelly loam
Bt1—5 to 15 inches; gravelly clay loam
Bt2—15 to 29 inches; gravelly clay loam
Bt3—29 to 38 inches; gravelly clay loam
Bt4—38 to 44 inches; gravelly clay loam
Bt5—44 to 61 inches; extremely stony clay loam
Bt6—61 to 72 inches; very stony clay loam

Minor Components in Map Unit 644

Clayey-skeletal soils
Composition: 6 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 6 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock
Composition: 6 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs gravelly loam and similar soils
Composition: 6 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Rock outcrop
Composition: 6 percent
Slope: 30 to 50 percent

Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

645—Chinacamp gravelly loam, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 400 to 1,600 feet (122 to 488 meters)
Mean annual precipitation: 30 to 50 inches (762 to 1,270 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Chinacamp gravelly loam—70 percent
Minor components—30 percent

Characteristics of Chinacamp Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Stony, fine-loamy colluvium derived from volcanic breccia
Observed vegetation: Canyon live oak, California black oak, blue oak, manzanita, bigleaf maple, California laurel, deerbrush, Pacific poison oak, foothill pine, valley oak, ponderosa pine, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent medium gravel, 0 to 20 percent cobbles, 0 to 30 percent stones, 0 to 15 percent boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 5 inches; gravelly loam
Bt1—5 to 15 inches; gravelly clay loam
Bt2—15 to 29 inches; gravelly clay loam
Bt3—29 to 38 inches; gravelly clay loam
Bt4—38 to 44 inches; gravelly clay loam
Bt5—44 to 61 inches; extremely stony clay loam
Bt6—61 to 72 inches; very stony clay loam

Minor Components in Map Unit 645

Rock outcrop
Composition: 8 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs gravelly loam and similar soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 4 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 10 to 20 inches deep to bedrock
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

646—Coalcanyon taxadjunct very gravelly loam, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat, watershed, and livestock grazing
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 600 to 1,115 feet (183 to 341 meters)
Mean annual precipitation: 30 to 37 inches (762 to 940 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 255 to 260 days

Map Unit Composition

Coalcanyon Taxadjunct very gravelly loam—80 percent
Minor components—20 percent

Characteristics of Coalcanyon Taxadjunct Very Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Parent material: Stony and gravelly colluvium derived from basalt
Observed vegetation: Blue oak, interior live oak, canyon live oak, foothill pine, California laurel, Pacific poison oak, manzanita, deerbrush, toyon, and annual grasses and forbs
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 10 to 60 percent subangular gravel, 5 to 50 percent subangular cobbles, 0 to 25 percent subangular stones, 0 to 20 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4s-7
Land capability, nonirrigated: 4s-7
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; very gravelly loam
Bt1—2 to 6 inches; very gravelly loam
Bt2—6 to 14 inches; very gravelly clay loam
Bt3—14 to 24 inches; very gravelly clay loam
Bt4—24 to 42 inches; extremely cobbly clay loam
2Bt5—42 to 54 inches; very cobbly clay
2Bt6—54 to 72 inches; very gravelly clay loam

Minor Components in Map Unit 646

Clayey-skeletal soils
Composition: 10 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Chinacamp and similar soils
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

Coonhollow gravelly loam and similar soils
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Benches in canyons
Hydric soil status: Not hydric

647—Coalcanyon taxadjunct very gravelly loam, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat, watershed, and livestock grazing
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 635 to 1,275 feet (195 to 390 meters)
Mean annual precipitation: 30 to 47 inches (762 to 1,194 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 240 to 260 days

Map Unit Composition

Coalcanyon Taxadjunct very gravelly loam—75 percent
Minor components—25 percent

Characteristics of Coalcanyon Taxadjunct Very Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes in canyons
Parent material: Stony and gravelly colluvium derived from basalt
Observed vegetation: Blue oak, interior live oak, canyon live oak, foothill pine, California laurel, Pacific poison oak, manzanita, deerbrush, toyon, and annual grasses and forbs
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 10 to 60 percent subangular gravel, 5 to 50 percent subangular cobbles, 0 to 25 percent subangular stones, 0 to 20 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 5.5 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Low

Interpretive groups
- *Land capability, irrigated:* 4s-7
- *Land capability, nonirrigated:* 4s-7
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- A—0 to 2 inches; very gravelly loam
- Bt1—2 to 6 inches; very gravelly loam
- Bt2—6 to 14 inches; very gravelly clay loam
- Bt3—14 to 24 inches; very gravelly clay loam
- Bt4—24 to 42 inches; extremely cobbly clay loam
- 2Bt5—42 to 54 inches; very cobbly clay
- 2Bt6—54 to 72 inches; very gravelly clay loam

Minor Components in Map Unit 647

Clayey-skeletal soils
Composition: 10 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Chinacamp and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Coonhollow gravelly loam and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs, sandstone, and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

648—Coalcanyon taxadjunct very gravelly loam, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat, watershed, and livestock grazing
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 435 to 1,555 feet (134 to 475 meters)
Mean annual precipitation: 30 to 47 inches (762 to 1,194 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 240 to 260 days

Map Unit Composition

Coalcanyon Taxadjunct very gravelly loam—80 percent
Minor components—20 percent

Characteristics of Coalcanyon Taxadjunct Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Parent material: Stony and gravelly colluvium derived from basalt
Observed vegetation: Blue oak, interior live oak, canyon live oak, foothill pine, California laurel, Pacific poison oak, manzanita, deerbrush, toyon, and annual grasses and forbs
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 10 to 60 percent subangular

gravel, 5 to 50 percent subangular cobbles, 0 to 25 percent subangular stones, 0 to 20 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-7
Land capability, nonirrigated: 6e-7
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; very gravelly loam
Bt1—2 to 6 inches; very gravelly loam
Bt2—6 to 14 inches; very gravelly clay loam
Bt3—14 to 24 inches; very gravelly clay loam
Bt4—24 to 42 inches; extremely cobbly clay loam
2Bt5—42 to 54 inches; very cobbly clay
2Bt6—54 to 72 inches; very gravelly clay loam

Minor Components in Map Unit 648

Ultic Haploxeralfs, sandstone, and similar soils
Composition: 8 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Chinacamp and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Coonhollow gravelly loam and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

649—Coalcanyon taxadjunct very gravelly loam, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat, watershed, and livestock grazing
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 675 to 1,915 feet (207 to 585 meters)
Mean annual precipitation: 35 to 47 inches (889 to 1,194 millimeters)
Mean annual air temperature: 57 to 59 degrees F (14 to 15 degrees C)
Frost-free period: 240 to 255 days

Map Unit Composition

Coalcanyon Taxadjunct very gravelly loam—75 percent
Minor components—25 percent

Characteristics of Coalcanyon Taxadjunct Very Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Stony and gravelly colluvium derived from basalt
Observed vegetation: Blue oak, interior live oak, canyon live oak, foothill pine, California laurel, Pacific poison oak, manzanita, deerbrush, toyon, and annual grasses and forbs
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 0 to 25 percent subangular stones, 0 to 20 percent subangular boulders, 10 to 60 percent subangular gravel, 5 to 50 percent subangular cobbles
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 5.5 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 7e-7
- *Land capability, nonirrigated:* 7e-7
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- A—0 to 2 inches; very gravelly loam
- Bt1—2 to 6 inches; very gravelly loam
- Bt2—6 to 14 inches; very gravelly clay loam
- Bt3—14 to 24 inches; very gravelly clay loam
- Bt4—24 to 42 inches; extremely cobbly clay loam
- 2Bt5—42 to 54 inches; very cobbly clay
- 2Bt6—54 to 72 inches; very gravelly clay loam

Minor Components in Map Unit 649

Ultic Haploxeralfs, sandstone, and similar soils
Composition: 10 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Chinacamp and similar soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Coonhollow gravelly loam and similar soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

650—Schott very gravelly loam, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Homesite development, timber production, watershed, and wildlife habitat
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 1,400 to 3,595 feet (427 to 1,097 meters)
Mean annual precipitation: 40 to 72 inches (1,016 to 1,829 millimeters)
Mean annual air temperature: 52 to 57 degrees F (11 to 14 degrees C)
Frost-free period: 155 to 230 days

Map Unit Composition

Schott very gravelly loam—65 percent
Minor components—35 percent

Characteristics of Schott Very Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: The top of volcanic ridges
Parent material: Loamy residuum weathered from volcanic breccia
Observed vegetation: Ponderosa pine, Douglas-fir, incense cedar, California black oak, canyon live oak, manzanita, California buckthorn, Pacific poison oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 6 inches; very gravelly loam
Bt1—6 to 13 inches; very gravelly clay loam
Bt2—13 to 22 inches; very cobbly clay loam
Bt3—22 to 40 inches; extremely gravelly clay loam
Bt4—40 to 50 inches; extremely gravelly sandy clay loam
R—50 inches; bedrock

Minor Components in Map Unit 650

Lydon soils, 20 to 35 percent clay, and similar soils
Composition: 10 percent
Slope: 3 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Lydon and similar soils
Composition: 8 percent
Slope: 3 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Andic Haploxeralfs with paralithic bedrock at a depth of 20 to 60 inches and similar soils
Composition: 7 percent
Slope: 3 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Paradiso and similar soils
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Rock outcrop
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Rockstripe and similar soils
Composition: 2 percent
Slope: 3 to 15 percent

Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

651—Schott very gravelly loam, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, watershed, and wildlife habitat
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 1,400 to 3,595 feet (427 to 1,097 meters)
Mean annual precipitation: 40 to 72 inches (1,016 to 1,829 millimeters)
Mean annual air temperature: 52 to 57 degrees F (11 to 14 degrees C)
Frost-free period: 155 to 230 days

Map Unit Composition

Schott very gravelly loam—65 percent
Minor components—35 percent

Characteristics of Schott Very Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Parent material: Loamy colluvium and/or residuum weathered from volcanic breccia
Observed vegetation: Ponderosa pine, Douglas-fir, incense cedar, California black oak, canyon live oak, manzanita, California buckthorn, Pacific poison oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 3.3 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 4e-1
- *Land capability, nonirrigated:* 4e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 2 inches; slightly decomposed plant material
- A—2 to 6 inches; very gravelly loam
- Bt1—6 to 13 inches; very gravelly clay loam
- Bt2—13 to 22 inches; very cobbly clay loam
- Bt3—22 to 40 inches; extremely gravelly clay loam
- Bt4—40 to 50 inches; extremely gravelly sandy clay loam
- R—50 inches; bedrock

Minor Components in Map Unit 651

Lydon and similar soils
Composition: 9 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

Rock outcrop
Composition: 8 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

Lydon soils, 20 to 35 percent clay, and similar soils
Composition: 6 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

Andic Haploxeralfs with paralithic bedrock at a depth of 20 to 60 inches and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

Rockstripe and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

Paradiso and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

652—Schott-Rock outcrop complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, watershed, and wildlife habitat
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 1,400 to 3,595 feet (427 to 1,097 meters)
Mean annual precipitation: 40 to 72 inches (1,016 to 1,829 millimeters)
Mean annual air temperature: 52 to 57 degrees F (11 to 14 degrees C)
Frost-free period: 155 to 230 days

Map Unit Composition

Schott very gravelly loam—65 percent
Rock outcrop (mudflow breccia)—20 percent
Minor components—15 percent

Characteristics of Schott Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Parent material: Loamy residuum and/or colluvium derived from volcanic breccia
Observed vegetation: Ponderosa pine, Douglas-fir, incense cedar, California black oak, canyon live oak, manzanita, California buckthorn, Pacific poison oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 6 inches; very gravelly loam
Bt1—6 to 13 inches; very gravelly clay loam
Bt2—13 to 22 inches; very cobbly clay loam
Bt3—22 to 40 inches; extremely gravelly clay loam
Bt4—40 to 50 inches; extremely gravelly sandy clay loam
R—50 inches; bedrock

Characteristics of Rock Outcrop (Mudflow Breccia)

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 652

Lydon soils, 20 to 35 percent clay, and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Lydon and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Andic Haploxeralfs with paralithic bedrock at a depth of 20 to 60 inches and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Tusccoll and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Rockstripe and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Paradiso and similar soils
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

654—Coridge-Rock outcrop complex, 3 to 8 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 340 to 1,755 feet (104 to 536 meters)
Mean annual precipitation: 26 to 37 inches (660 to 940 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Coridge bouldery loam—70 percent
Rock outcrop (Cohasset basalt)—20 percent
Minor components—10 percent

Characteristics of Coridge Bouldery Loam

Slope: 3 to 8 percent
Geomorphic position: The top of basalt ridges
Parent material: Fine-loamy residuum over clayey residuum weathered from basalt
Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, buckbrush, chamise, scrub oak, manzanita, and Pacific poison oak
Texture of the surface layer: Bouldery loam
Percentage of the surface covered by rock fragments: 5 to 25 percent medium gravel, 5 to 15 percent cobbles, 5 to 15 percent stones, 2 to 20 percent boulders
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 10 to 40 inches
Available water capacity: Low (about 3.0 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-7
Land capability, nonirrigated: 7e-7
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 1 inch; bouldery loam
Bt1—1 to 6 inches; gravelly loam
Bt2—6 to 12 inches; gravelly clay loam
Bt3—12 to 19 inches; very gravelly clay loam
Bt4—19 to 24 inches; very gravelly clay
R—24 inches; bedrock

Characteristics of Rock Outcrop (Cohasset Basalt)

Slope: 3 to 8 percent
Geomorphic position: The top of basalt ridges
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 654

Soils that are less than 20 inches deep to bedrock
Composition: 5 percent
Slope: 3 to 8 percent
Geomorphic position: The top of basalt ridges
Hydric soil status: Not hydric

Soils that are more than 40 inches deep to bedrock
Composition: 5 percent
Slope: 3 to 8 percent
Geomorphic position: The top of basalt ridges
Hydric soil status: Not hydric

655—Coridge-Rock outcrop complex, 8 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 380 to 1,095 feet (116 to 335 meters)
Mean annual precipitation: 27 to 29 inches (686 to 737 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Coridge bouldery loam—70 percent
Rock outcrop (Cohasset basalt)—20 percent
Minor components—10 percent

Characteristics of Coridge Bouldery Loam

Slope: 8 to 15 percent
Geomorphic position: The top of basalt ridges
Parent material: Fine-loamy residuum over clayey residuum weathered from basalt
Observed vegetation: Annual grasses and forbs, blue oak, foothill pine, buckbrush, chamise, scrub oak, manzanita, and Pacific poison oak
Texture of the surface layer: Bouldery loam
Percentage of the surface covered by rock fragments: 5 to 25 percent medium gravel, 5 to 15 percent cobbles, 5 to 15 percent stones, 2 to 20 percent boulders
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 10 to 40 inches
- *Available water capacity:* Low (about 3.0 inches)
- *Natural drainage class:* Moderately well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 7e-7
- *Land capability, nonirrigated:* 7e-7
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A—0 to 1 inch; bouldery loam
- Bt1—1 to 6 inches; gravelly loam
- Bt2—6 to 12 inches; gravelly clay loam
- Bt3—12 to 19 inches; very gravelly clay loam
- Bt4—19 to 24 inches; very gravelly clay
- R—24 inches; bedrock

Characteristics of Rock Outcrop (Cohasset Basalt)

Slope: 8 to 15 percent
Geomorphic position: The top of basalt ridges
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 655

Soils that are less than 20 inches deep to bedrock
Composition: 5 percent
Slope: 8 to 15 percent
Geomorphic position: The top of basalt ridges
Hydric soil status: Not hydric

Soils that are more than 40 inches deep to bedrock
Composition: 5 percent
Slope: 8 to 15 percent

Geomorphic position: The top of basalt ridges
Hydric soil status: Not hydric

656—Rock outcrop, cliffs-Coalcanyon taxadjunct complex, 15 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat, watershed, and livestock grazing
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 295 to 2,200 feet (91 to 671 meters)
Mean annual precipitation: 27 to 53 inches (686 to 1,346 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Rock outcrop (basalt cliffs)—40 percent
Coalcanyon Taxadjunct very gravelly loam—40 percent
Minor components—20 percent

Characteristics of Rock Outcrop (Basalt Cliffs)

Slope: 15 to 200 percent
Geomorphic position: Basalt escarpments in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Characteristics of Coalcanyon Taxadjunct Very Gravelly Loam

Slope: 15 to 50 percent
Geomorphic position: Basalt escarpments in canyons
Parent material: Bouldery and gravelly colluvium derived from basalt
Observed vegetation: Interior live oak, canyon live oak, California laurel, Pacific poison oak, toyon, blue oak, and annual grasses and forbs
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 10 to 60 percent subangular gravel, 5 to 50 percent subangular cobbles, 0 to 25 percent subangular stones, 0 to 20 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 5.5 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 6e-7
- *Land capability, nonirrigated:* 6e-7
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
A—0 to 2 inches; very gravelly loam
Bt1—2 to 6 inches; very gravelly loam
Bt2—6 to 14 inches; very gravelly clay loam
Bt3—14 to 24 inches; very gravelly clay loam
Bt4—24 to 42 inches; extremely cobbly clay loam
2Bt5—42 to 54 inches; very cobbly clay
2Bt6—54 to 72 inches; very gravelly clay loam

Minor Components in Map Unit 656

Coonhollow gravelly loam and similar soils
Composition: 10 percent
Slope: 15 to 50 percent
Geomorphic position: Basalt escarpments in canyons
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 5 percent
Slope: 15 to 50 percent
Geomorphic position: Basalt escarpments in canyons
Hydric soil status: Not hydric

Talus
Composition: 5 percent
Slope: 15 to 50 percent
Geomorphic position: Basalt escarpments in canyons
Hydric soil status: Not hydric

657—Bonneyridge-Chawanakee-Rock outcrop complex, 2 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,595 to 5,600 feet (1,097 to 1,707 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)
Frost-free period: 80 to 170 days

Map Unit Composition

Bonneyridge sandy loam—35 percent
Chawanakee gravelly sandy loam—30 percent
Rock outcrop (quartz diorite)—20 percent
Minor components—15 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Parent material: Coarse-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: Ponderosa pine, white fir, sugar pine, incense cedar, California

black oak, tanoak, whitethorn ceanothus, Sierra chinquapin, manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; sandy loam
A2—3 to 6 inches; sandy loam
Bw1—6 to 16 inches; coarse sandy loam
Bw2—16 to 22 inches; coarse sandy loam
Bw3—22 to 31 inches; coarse sandy loam
Bw4—31 to 39 inches; sandy loam
C1—39 to 56 inches; loamy coarse sand
C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Parent material: Coarse-loamy residuum weathered from quartz diorite
Observed vegetation: Manzanita, ponderosa pine, sugar pine, white fir, canyon live oak, tanoak, incense cedar, shrub tanoak, whitethorn ceanothus, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1

Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 5 inches; gravelly sandy loam
Bw1—5 to 11 inches; gravelly sandy loam
Bw2—11 to 19 inches; gravelly sandy loam
Cr—19 inches; bedrock

Characteristics of Rock Outcrop (Quartz Diorite)

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 657

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Lithic Xerorthents and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Dystric Xeropsamments and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Lithic Xeropsamments and similar soils
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Billscabin gravelly sandy loam and similar soils
Composition: 1 percent

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

658—Bonneyridge-Chawanakee-Rock outcrop complex, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,595 to 5,780 feet (1,097 to 1,762 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)
Frost-free period: 80 to 170 days

Map Unit Composition

Bonneyridge sandy loam—35 percent
Chawanakee gravelly sandy loam—30 percent
Rock outcrop (quartz diorite)—25 percent
Minor components—10 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Parent material: Coarse-loamy colluvium derived from quartz diorite
Observed vegetation: Ponderosa pine, white fir, sugar pine, incense cedar, California black oak, tanoak, whitethorn ceanothus, Sierra chinquapin, manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; sandy loam

A2—3 to 6 inches; sandy loam
Bw1—6 to 16 inches; coarse sandy loam
Bw2—16 to 22 inches; coarse sandy loam
Bw3—22 to 31 inches; coarse sandy loam
Bw4—31 to 39 inches; sandy loam
C1—39 to 56 inches; loamy coarse sand
C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Parent material: Coarse-loamy residuum weathered from quartz diorite
Observed vegetation: Manzanita, ponderosa pine, sugar pine, white fir, canyon live oak, tanoak, incense cedar, shrub tanoak, whitethorn ceanothus, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 5 inches; gravelly sandy loam
Bw1—5 to 11 inches; gravelly sandy loam
Bw2—11 to 19 inches; gravelly sandy loam
Cr—19 inches; bedrock

Characteristics of Rock Outcrop (Quartz Diorite)

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 658

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Hydric soil status: Not hydric

Lithic Xerorthents and similar soils
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Hydric soil status: Not hydric

Lithic Xeropsamments and similar soils
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Hydric soil status: Not hydric

Dystric Xeropsamments and similar soils
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on granitic mountains
Hydric soil status: Not hydric

659—Bonneyridge-Chawanakee-Rock outcrop complex, 30 to 50 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,795 to 5,600 feet (853 to 1,707 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)
Frost-free period: 80 to 170 days

Map Unit Composition

Bonneyridge sandy loam—35 percent
Chawanakee gravelly sandy loam—30 percent
Rock outcrop (quartz diorite)—25 percent
Minor components—10 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy colluvium derived from quartz diorite

Observed vegetation: Ponderosa pine, white fir, sugar pine, incense cedar, California black oak, tanoak, whitethorn ceanothus, Sierra chinquapin, manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; sandy loam
A2—3 to 6 inches; sandy loam
Bw1—6 to 16 inches; coarse sandy loam
Bw2—16 to 22 inches; coarse sandy loam
Bw3—22 to 31 inches; coarse sandy loam
Bw4—31 to 39 inches; sandy loam
C1—39 to 56 inches; loamy coarse sand
C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy residuum weathered from quartz diorite
Observed vegetation: Manzanita, ponderosa pine, sugar pine, white fir, canyon live oak, tanoak, incense cedar, shrub tanoak, whitethorn ceanothus, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 5 inches; gravelly sandy loam
Bw1—5 to 11 inches; gravelly sandy loam
Bw2—11 to 19 inches; gravelly sandy loam
Cr—19 inches; bedrock

Characteristics of Rock Outcrop (Quartz Diorite)

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 659

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Lithic Xerorthents and similar soils
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Lithic Xeropsamments and similar soils
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Billscabin gravelly sandy loam and similar soils
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

660—Bonneyridge-Chawanakee-Rock outcrop complex, 50 to 70 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,495 to 4,900 feet (762 to 1,494 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)
Frost-free period: 80 to 170 days

Map Unit Composition

Bonneyridge sandy loam—30 percent
Chawanakee gravelly sandy loam—30 percent
Rock outcrop (quartz diorite)—30 percent
Minor components—10 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on granitic mountains
Parent material: Coarse-loamy colluvium derived from quartz diorite
Observed vegetation: Ponderosa pine, white fir, sugar pine, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, Sierra chinquapin, manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; sandy loam
A2—3 to 6 inches; sandy loam
Bw1—6 to 16 inches; coarse sandy loam
Bw2—16 to 22 inches; coarse sandy loam
Bw3—22 to 31 inches; coarse sandy loam
Bw4—31 to 39 inches; sandy loam

C1—39 to 56 inches; loamy coarse sand
C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on granitic mountains
Parent material: Coarse-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: Manzanita, ponderosa pine, sugar pine, white fir, canyon live oak, tanoak, incense cedar, shrub tanoak, whitethorn ceanothus, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 5 inches; gravelly sandy loam
Bw1—5 to 11 inches; gravelly sandy loam
Bw2—11 to 19 inches; gravelly sandy loam
Cr—19 inches; bedrock

Characteristics of Rock Outcrop (Quartz Diorite)

Slope: 50 to 70 percent
Geomorphic position: Backslopes on granitic mountains
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 660

Lithic Xerorthents and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on granitic mountains
Hydric soil status: Not hydric

Lithic Xeropsamments and similar soils
Composition: 3 percent
Slope: 50 to 70 percent

Geomorphic position: Backslopes on granitic mountains
Hydric soil status: Not hydric

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime
Composition: 1 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on granitic mountains
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock
Composition: 1 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on granitic mountains
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 1 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on granitic mountains
Hydric soil status: Not hydric

Billscabin gravelly sandy loam and similar soils
Composition: 1 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on granitic mountains
Hydric soil status: Not hydric

661—Millerridge-Boxrobber complex, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat, watershed, and homesite development
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,400 to 2,850 feet (427 to 869 meters)
Mean annual precipitation: 45 to 55 inches (1,143 to 1,397 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 230 to 250 days

Map Unit Composition

Millerridge gravelly sandy clay loam—45 percent
Boxrobber cobbly sandy clay loam—40 percent
Minor components—15 percent

Characteristics of Millerridge Gravelly Sandy Clay Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on ultramafic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from ultramafic rocks
Observed vegetation: Blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs
Texture of the surface layer: Gravelly sandy clay loam

Percentage of the surface covered by rock fragments: 0 to 60 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3e-9
Land capability, nonirrigated: 3e-9
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly sandy clay loam
Bt1—2 to 6 inches; stony sandy clay loam
Bt2—6 to 12 inches; cobbly clay loam
Bt3—12 to 20 inches; cobbly clay loam
Bt4—20 to 26 inches; gravelly clay
Crt—26 inches; bedrock

Characteristics of Boxrobber Cobbly Sandy Clay Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on ultramafic mountains
Parent material: Gravelly and loamy residuum weathered from ultramafic rocks
Observed vegetation: Blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs
Texture of the surface layer: Cobbly sandy clay loam
Percentage of the surface covered by rock fragments: 5 to 60 percent medium gravel, 5 to 30 percent cobbles, 5 to 20 percent stones, 3 to 15 percent boulders
Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 79 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-7
Land capability, nonirrigated: 7e-7
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; cobbly sandy clay loam

Bt1—2 to 8 inches; very gravelly sandy clay loam
Bt2—8 to 16 inches; very gravelly clay loam
Crt—16 to 30 inches; bedrock
R—30 inches; bedrock

Minor Components in Map Unit 661

Earlal and similar soils
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on ultramafic mountains
Hydric soil status: Not hydric

Typic Haploxeralfs, magnesic, and similar soils
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on ultramafic mountains
Hydric soil status: Not hydric

Griffgulch and similar soils
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metavolcanic mountains
Hydric soil status: Not hydric

At an elevation of less than 1,800 feet, soils with a thermic soil temperature regime
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on ultramafic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on ultramafic mountains
Hydric soil status: Not hydric

Surnuf and similar soils
Composition: 1 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metavolcanic mountains
Hydric soil status: Not hydric

662—Millerridge-Boxrobber complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat, watershed, and homesite development
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,400 to 2,700 feet (427 to 823 meters)
Mean annual precipitation: 45 to 55 inches (1,143 to 1,397 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 230 to 250 days

Map Unit Composition

Millerridge gravelly sandy clay loam—45 percent
Boxrobber cobbly sandy clay loam—40 percent
Minor components—15 percent

Characteristics of Millerridge Gravelly Sandy Clay Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic mountains
Parent material: Fine-loamy colluvium derived from ultramafic rocks
Observed vegetation: Blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs
Texture of the surface layer: Gravelly sandy clay loam
Percentage of the surface covered by rock fragments: 0 to 60 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-9
Land capability, nonirrigated: 4e-9
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly sandy clay loam
Bt1—2 to 6 inches; stony sandy clay loam
Bt2—6 to 12 inches; cobbly clay loam
Bt3—12 to 20 inches; cobbly clay loam
Bt4—20 to 26 inches; gravelly clay
Crt—26 inches; bedrock

Characteristics of Boxrobber Cobbly Sandy Clay Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic mountains
Parent material: Gravelly and loamy colluvium derived from ultramafic rocks
Observed vegetation: Blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs
Texture of the surface layer: Cobbly sandy clay loam
Percentage of the surface covered by rock fragments: 5 to 60 percent medium gravel, 5 to 30 percent cobbles, 5 to 20 percent stones, 3 to 15 percent boulders
Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 79 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-7
Land capability, nonirrigated: 7e-7
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; cobbly sandy clay loam
Bt1—2 to 8 inches; very gravelly sandy clay loam
Bt2—8 to 16 inches; very gravelly clay loam
Crt—16 to 30 inches; bedrock
R—30 inches; bedrock

Minor Components in Map Unit 662

Earlal and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic mountains
Hydric soil status: Not hydric

Typic Haploxeralfs, magnesic, and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic mountains
Hydric soil status: Not hydric

Griffgulch and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Hydric soil status: Not hydric

At an elevation of less than 1,800 feet, soils with a thermic soil temperature regime
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic mountains
Hydric soil status: Not hydric

Surnuf and similar soils
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Hydric soil status: Not hydric

663—Millerridge-Boxrobber complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 950 to 2,795 feet (290 to 853 meters)
Mean annual precipitation: 47 to 55 inches (1,194 to 1,397 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 230 to 240 days

Map Unit Composition

Millerridge gravelly sandy clay loam—45 percent
Boxrobber cobbly sandy clay loam—40 percent
Minor components—15 percent

Characteristics of Millerridge Gravelly Sandy Clay Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Parent material: Fine-loamy colluvium derived from ultramafic rocks
Observed vegetation: Canyon live oak, blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs
Texture of the surface layer: Gravelly sandy clay loam
Percentage of the surface covered by rock fragments: 0 to 60 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 4.1 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 6e-9
- *Land capability, nonirrigated:* 6e-9
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* C

Typical profile
- A—0 to 2 inches; gravelly sandy clay loam
- Bt1—2 to 6 inches; stony sandy clay loam
- Bt2—6 to 12 inches; cobbly clay loam
- Bt3—12 to 20 inches; cobbly clay loam
- Bt4—20 to 26 inches; gravelly clay
- Crt—26 inches; bedrock

Characteristics of Boxrobber Cobbly Sandy Clay Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Parent material: Gravelly and loamy colluvium derived from ultramafic rocks
Observed vegetation: Canyon live oak, blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs
Texture of the surface layer: Cobbly sandy clay loam
Percentage of the surface covered by rock fragments: 5 to 60 percent medium gravel, 5 to 30 percent cobbles, 5 to 20 percent stones, 3 to 15 percent boulders
Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 79 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very low (about 1.3 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 7e-7
- *Land capability, nonirrigated:* 7e-7
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* D

Typical profile
- A—0 to 2 inches; cobbly sandy clay loam
- Bt1—2 to 8 inches; very gravelly sandy clay loam
- Bt2—8 to 16 inches; very gravelly clay loam
- Crt—16 to 30 inches; bedrock
- R—30 inches; bedrock

Minor Components in Map Unit 663

Earlal and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Typic Haploxeralfs, magnesic, and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Griffgulch and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 3 percent
Slope: 30 to 50 percent

Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Surnuf and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

664—Millerridge-Boxrobber complex, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 950 to 2,595 feet (290 to 792 meters)
Mean annual precipitation: 47 to 55 inches (1,194 to 1,397 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 230 to 240 days

Map Unit Composition

Millerridge gravelly sandy clay loam—45 percent
Boxrobber cobbly sandy clay loam—40 percent
Minor components—15 percent

Characteristics of Millerridge Gravelly Sandy Clay Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on ultramafic mountains
Parent material: Fine-loamy colluvium derived from ultramafic rocks
Observed vegetation: Canyon live oak, blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs
Texture of the surface layer: Gravelly sandy clay loam
Percentage of the surface covered by rock fragments: 0 to 60 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-9
Land capability, nonirrigated: 7e-9
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly sandy clay loam
Bt1—2 to 6 inches; stony sandy clay loam
Bt2—6 to 12 inches; cobbly clay loam
Bt3—12 to 20 inches; cobbly clay loam
Bt4—20 to 26 inches; gravelly clay
Crt—26 inches; bedrock

Characteristics of Boxrobber Cobbly Sandy Clay Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on ultramafic mountains
Parent material: Gravelly and loamy colluvium derived from ultramafic rocks
Observed vegetation: Canyon live oak, blue oak, foothill pine, California laurel, manzanita, buckbrush, and annual grasses and forbs
Texture of the surface layer: Cobbly sandy clay loam
Percentage of the surface covered by rock fragments: 5 to 60 percent medium gravel, 5 to 30 percent cobbles, 5 to 20 percent stones, 3 to 15 percent boulders
Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 79 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-7
Land capability, nonirrigated: 7e-7
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; cobbly sandy clay loam
Bt1—2 to 8 inches; very gravelly sandy clay loam
Bt2—8 to 16 inches; very gravelly clay loam
Crt—16 to 30 inches; bedrock
R—30 inches; bedrock

Minor Components in Map Unit 664

Earlal and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on ultramafic mountains
Hydric soil status: Not hydric

Typic Haploxeralfs, magnesic, and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on ultramafic mountains
Hydric soil status: Not hydric

Griffgulch and similar soils
Composition: 3 percent

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on ultramafic mountains
Hydric soil status: Not hydric

Surnuf and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic mountains
Hydric soil status: Not hydric

665—Surnuf-Bigridge complex, 3 to 15 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Timber production, homesite development, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,440 to 2,295 feet (439 to 701 meters)
Mean annual precipitation: 46 to 55 inches (1,168 to 1,397 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 235 to 245 days

Map Unit Composition

Surnuf gravelly loam—40 percent
Bigridge loam—40 percent
Minor components—20 percent

Characteristics of Surnuf Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metasedimentary mountains
Parent material: Silty and clayey residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly clay loam
Bt2—9 to 16 inches; gravelly clay loam
Bt3—16 to 27 inches; gravelly clay
Bt4—27 to 29 inches; gravelly clay
Bt5—29 to 56 inches; gravelly silty clay
Bt6—56 to 72 inches; silty clay

Characteristics of Bigridge Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metasedimentary mountains
Parent material: Fine-loamy residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Moderately decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 5 inches; loam
BAt—5 to 9 inches; gravelly loam
Bt1—9 to 15 inches; gravelly loam
Bt2—15 to 20 inches; gravelly loam
BCt1—20 to 27 inches; very gravelly loam
BCt2—27 to 36 inches; extremely gravelly loam
BCt3—36 to 51 inches; very gravelly loam
Crt—51 to 62 inches; bedrock

Minor Components in Map Unit 665

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils
Composition: 10 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metasedimentary mountains
Hydric soil status: Not hydric

Minniecreek and similar soils
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metasedimentary mountains
Hydric soil status: Not hydric

Spine taxadjunct and similar soils
Composition: 4 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metasedimentary mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metasedimentary mountains
Hydric soil status: Not hydric

666—Surnuf-Bigridge complex, 15 to 30 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Timber production, homesite development, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,095 to 2,795 feet (335 to 853 meters)
Mean annual precipitation: 46 to 60 inches (1,168 to 1,524 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 200 to 245 days

Map Unit Composition

Surnuf gravelly loam—40 percent
Bigridge loam—40 percent
Minor components—20 percent

Characteristics of Surnuf Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metasedimentary mountains
Parent material: Silty and clayey colluvium and/or residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly clay loam
Bt2—9 to 16 inches; gravelly clay loam
Bt3—16 to 27 inches; gravelly clay
Bt4—27 to 29 inches; gravelly clay
Bt5—29 to 56 inches; gravelly silty clay
Bt6—56 to 72 inches; silty clay

Characteristics of Bigridge Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metasedimentary mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Moderately decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 5 inches; loam
BAt—5 to 9 inches; gravelly loam
Bt1—9 to 15 inches; gravelly loam
Bt2—15 to 20 inches; gravelly loam
BCt1—20 to 27 inches; very gravelly loam
BCt2—27 to 36 inches; extremely gravelly loam
BCt3—36 to 51 inches; very gravelly loam
Crt—51 to 62 inches; bedrock

Minor Components in Map Unit 666

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils
Composition: 10 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Minniecreek and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Spine taxadjunct and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metasedimentary mountains
Hydric soil status: Not hydric

667—Surnuf-Bigridge complex, 30 to 50 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,000 to 2,715 feet (305 to 829 meters)
Mean annual precipitation: 46 to 60 inches (1,168 to 1,524 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 200 to 245 days

Map Unit Composition

Surnuf gravelly loam—40 percent
Bigridge loam—40 percent
Minor components—20 percent

Characteristics of Surnuf Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Parent material: Silty and clayey residuum and/or colluvium derived from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly clay loam
Bt2—9 to 16 inches; gravelly clay loam
Bt3—16 to 27 inches; gravelly clay
Bt4—27 to 29 inches; gravelly clay
Bt5—29 to 56 inches; gravelly silty clay
Bt6—56 to 72 inches; silty clay

Characteristics of Bigridge Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Parent material: Fine-loamy residuum and/or colluvium derived from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Moderately decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 5 inches; loam
BAt—5 to 9 inches; gravelly loam
Bt1—9 to 15 inches; gravelly loam
Bt2—15 to 20 inches; gravelly loam
BCt1—20 to 27 inches; very gravelly loam
BCt2—27 to 36 inches; extremely gravelly loam
BCt3—36 to 51 inches; very gravelly loam
Crt—51 to 62 inches; bedrock

Minor Components in Map Unit 667

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils
Composition: 10 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Minniecreek and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Spine taxadjunct and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

668—Surnuf-Bigridge complex, 50 to 70 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 895 to 2,715 feet (274 to 829 meters)

Mean annual precipitation: 46 to 60 inches (1,168 to 1,524 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 200 to 245 days

Map Unit Composition

Surnuf gravelly loam—40 percent
Bigridge loam—40 percent
Minor components—20 percent

Characteristics of Surnuf Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Silty and clayey residuum and/or colluvium derived from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly clay loam
Bt2—9 to 16 inches; gravelly clay loam
Bt3—16 to 27 inches; gravelly clay
Bt4—27 to 29 inches; gravelly clay
Bt5—29 to 56 inches; gravelly silty clay
Bt6—56 to 72 inches; silty clay

Characteristics of Bigridge Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Fine-loamy residuum and/or colluvium derived from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, canyon live oak, California black oak, incense cedar, tanoak, Pacific madrone, manzanita, toyon, and Pacific poison oak

Texture of the surface layer: Moderately decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 5 inches; loam
BAt—5 to 9 inches; gravelly loam
Bt1—9 to 15 inches; gravelly loam
Bt2—15 to 20 inches; gravelly loam
BCt1—20 to 27 inches; very gravelly loam
BCt2—27 to 36 inches; extremely gravelly loam
BCt3—36 to 51 inches; very gravelly loam
Crt—51 to 62 inches; bedrock

Minor Components in Map Unit 668

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils
Composition: 10 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Minniecreek and similar soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Spine taxadjunct and similar soils
Composition: 4 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

669—Oroshore-Mounthope-Dunstone complex, 3 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Homesite development, livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 435 to 2,095 feet (134 to 640 meters)
Mean annual precipitation: 35 to 50 inches (889 to 1,270 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 240 to 260 days

Map Unit Composition

Oroshore gravelly loam—35 percent
Mounthope loam—25 percent
Dunstone gravelly loam—20 percent
Minor components—20 percent

Characteristics of Oroshore Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metamorphic hills
Parent material: Gravelly and loamy residuum weathered from metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 5 to 30 percent angular gravel, 0 to 25 percent angular cobbles, 0 to 10 percent angular stones, 0 to 10 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 4.1 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 3e-1
- *Land capability, nonirrigated:* 3e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- A—0 to 2 inches; gravelly loam
- Bt1—2 to 15 inches; gravelly clay loam
- Bt2—15 to 28 inches; very cobbly clay loam
- Bt3—28 to 34 inches; extremely gravelly clay loam
- Crt—34 inches; bedrock

Characteristics of Mounthope Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metamorphic hills
Parent material: Fine-loamy residuum weathered from metamorphic rocks
Observed vegetation: Interior live oak, canyon live oak, foothill pine, blue oak, buckbrush, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; loam
Bt1—3 to 7 inches; loam
Bt2—7 to 15 inches; loam
Bt3—15 to 22 inches; gravelly clay loam
Bt4—22 to 26 inches; gravelly clay loam
Bt5—26 to 31 inches; very gravelly clay loam
Bt6—31 to 42 inches; very gravelly clay loam
Bt7—42 to 52 inches; gravelly clay loam
Cr—52 inches; bedrock

Characteristics of Dunstone Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metamorphic hills
Parent material: Loamy residuum weathered from metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders
Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed

Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A1—0 to 4 inches; gravelly loam
A2—4 to 6 inches; gravelly loam
Bt1—6 to 10 inches; gravelly loam
Bt2—10 to 15 inches; very gravelly loam
Crt—15 to 37 inches; bedrock
R—37 inches; bedrock

Minor Components in Map Unit 669

Rock outcrop
Composition: 6 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metamorphic hills
Hydric soil status: Not hydric

Fine textured soils
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metamorphic hills
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metamorphic hills
Hydric soil status: Not hydric

Boxrobber and similar soils
Composition: 2 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on ultramafic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 2 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metamorphic hills
Hydric soil status: Not hydric

670—Oroshore-Mounthope-Dunstone complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Homesite development, livestock grazing, wildlife habitat, and watershed
Major land resource area: 18

Landscape: Northern Sierra Nevada foothills
Elevation: 435 to 2,095 feet (134 to 640 meters)
Mean annual precipitation: 35 to 60 inches (889 to 1,524 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 200 to 260 days

Map Unit Composition

Oroshore gravelly loam—35 percent
Mounthope loam—25 percent
Dunstone gravelly loam—20 percent
Minor components—20 percent

Characteristics of Oroshore Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic hills
Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 5 to 30 percent angular gravel, 0 to 25 percent angular cobbles, 0 to 10 percent angular stones, 0 to 10 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 15 inches; gravelly clay loam
Bt2—15 to 28 inches; very cobbly clay loam
Bt3—28 to 34 inches; extremely gravelly clay loam
Crt—34 inches; bedrock

Characteristics of Mounthope Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic hills
Parent material: Fine-loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Interior live oak, canyon live oak, foothill pine, blue oak, buckbrush, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse,

subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; loam
Bt1—3 to 7 inches; loam
Bt2—7 to 15 inches; loam
Bt3—15 to 22 inches; gravelly clay loam
Bt4—22 to 26 inches; gravelly clay loam
Bt5—26 to 31 inches; very gravelly clay loam
Bt6—31 to 42 inches; very gravelly clay loam
Bt7—42 to 52 inches; gravelly clay loam
Cr—52 inches; bedrock

Characteristics of Dunstone Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic hills
Parent material: Loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders
Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A1—0 to 4 inches; gravelly loam
A2—4 to 6 inches; gravelly loam
Bt1—6 to 10 inches; gravelly loam
Bt2—10 to 15 inches; very gravelly loam
Crt—15 to 37 inches; bedrock
R—37 inches; bedrock

Minor Components in Map Unit 670

Rock outcrop
Composition: 8 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic hills
Hydric soil status: Not hydric

Fine textured soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic hills
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic hills
Hydric soil status: Not hydric

Boxrobber and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic hills
Hydric soil status: Not hydric

671—Oroshore-Mounthope-Dunstone complex, 30 to 50 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat, watershed, and livestock grazing
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 590 to 2,400 feet (180 to 732 meters)
Mean annual precipitation: 35 to 60 inches (889 to 1,524 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 200 to 260 days

Map Unit Composition

Oroshore gravelly loam—35 percent
Mounthope loam—25 percent

Dunstone gravelly loam—20 percent
Minor components—20 percent

Characteristics of Oroshore Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic hills
Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 5 to 30 percent angular gravel, 0 to 25 percent angular cobbles, 0 to 10 percent angular stones, 0 to 10 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 15 inches; gravelly clay loam
Bt2—15 to 28 inches; very cobbly clay loam
Bt3—28 to 34 inches; extremely gravelly clay loam
Crt—34 inches; bedrock

Characteristics of Mounthope Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic hills
Parent material: Fine-loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Interior live oak, canyon live oak, foothill pine, blue oak, buckbrush, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed

Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; loam
Bt1—3 to 7 inches; loam
Bt2—7 to 15 inches; loam
Bt3—15 to 22 inches; gravelly clay loam
Bt4—22 to 26 inches; gravelly clay loam
Bt5—26 to 31 inches; very gravelly clay loam
Bt6—31 to 42 inches; very gravelly clay loam
Bt7—42 to 52 inches; gravelly clay loam
Cr—52 inches; bedrock

Characteristics of Dunstone Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic hills
Parent material: Loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders
Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A1—0 to 4 inches; gravelly loam
A2—4 to 6 inches; gravelly loam
Bt1—6 to 10 inches; gravelly loam
Bt2—10 to 15 inches; very gravelly loam
Crt—15 to 37 inches; bedrock
R—37 inches; bedrock

Minor Components in Map Unit 671

Rock outcrop
Composition: 10 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic hills
Hydric soil status: Not hydric

Fine textured soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic hills
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic hills
Hydric soil status: Not hydric

Boxrobber and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic hills
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic hills
Hydric soil status: Not hydric

672—Oroshore-Mounthope-Dunstone complex, 50 to 70 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 895 to 2,400 feet (274 to 732 meters)
Mean annual precipitation: 37 to 60 inches (940 to 1,524 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 200 to 260 days

Map Unit Composition

Oroshore gravelly loam—30 percent
Mounthope loam—25 percent
Dunstone gravelly loam—25 percent
Minor components—20 percent

Characteristics of Oroshore Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons

Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 5 to 30 percent angular gravel, 0 to 25 percent angular cobbles, 0 to 10 percent angular stones, 0 to 10 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 15 inches; gravelly clay loam
Bt2—15 to 28 inches; very cobbly clay loam
Bt3—28 to 34 inches; extremely gravelly clay loam
Crt—34 inches; bedrock

Characteristics of Mounthope Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Fine-loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Interior live oak, canyon live oak, foothill pine, blue oak, buckbrush, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; loam
Bt1—3 to 7 inches; loam
Bt2—7 to 15 inches; loam
Bt3—15 to 22 inches; gravelly clay loam
Bt4—22 to 26 inches; gravelly clay loam
Bt5—26 to 31 inches; very gravelly clay loam
Bt6—31 to 42 inches; very gravelly clay loam
Bt7—42 to 52 inches; gravelly clay loam
Cr—52 inches; bedrock

Characteristics of Dunstone Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Annual grasses and forbs, blue oak, interior live oak, canyon live oak, foothill pine, buckbrush, manzanita, toyon, and Pacific poison oak
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 5 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 1 percent subangular boulders
Depth to a restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A1—0 to 4 inches; gravelly loam
A2—4 to 6 inches; gravelly loam
Bt1—6 to 10 inches; gravelly loam
Bt2—10 to 15 inches; very gravelly loam
Crt—15 to 37 inches; bedrock
R—37 inches; bedrock

Minor Components in Map Unit 672

Rock outcrop
Composition: 12 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Fine textured soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Boxrobber and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

674—Chawanakee-Bonneyridge-Rock outcrop complex, 70 to 110 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Wildlife habitat and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,675 to 3,995 feet (512 to 1,219 meters)
Mean annual precipitation: 72 to 78 inches (1,829 to 1,981 millimeters)
Mean annual air temperature: 48 to 52 degrees F (9 to 11 degrees C)
Frost-free period: 100 to 150 days

Map Unit Composition

Chawanakee gravelly sandy loam—30 percent
Bonneyridge sandy loam—30 percent
Rock outcrop (quartz diorite)—30 percent
Minor components—10 percent

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Parent material: Coarse-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: Manzanita, ponderosa pine, sugar pine, white fir, canyon live oak, tanoak, incense cedar, shrub tanoak, whitethorn ceanothus, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders

Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 5 inches; gravelly sandy loam
Bw1—5 to 11 inches; gravelly sandy loam
Bw2—11 to 19 inches; gravelly sandy loam
Cr—19 inches; bedrock

Characteristics of Bonneyridge Sandy Loam

Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Parent material: Coarse-loamy colluvium derived from quartz diorite
Observed vegetation: Ponderosa pine, white fir, sugar pine, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, Sierra chinquapin, manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; sandy loam
A2—3 to 6 inches; sandy loam

Bw1—6 to 16 inches; coarse sandy loam
Bw2—16 to 22 inches; coarse sandy loam
Bw3—22 to 31 inches; coarse sandy loam
Bw4—31 to 39 inches; sandy loam
C1—39 to 56 inches; loamy coarse sand
C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Rock Outcrop (Quartz Diorite)

Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 674

Lithic Xerorthents and similar soils
Composition: 3 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Lithic Xeropsamments and similar soils
Composition: 3 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to bedrock
Composition: 2 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 1 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Billscabin gravelly sandy loam and similar soils
Composition: 1 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

675—Clearhayes-Hamslough complex, 0 to 2 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 140 to 400 feet (43 to 122 meters)
Mean annual precipitation: 25 to 29 inches (635 to 737 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Clearhayes sandy clay loam—70 percent
Hamslough clay—15 percent
Minor components—15 percent

Characteristics of Clearhayes Sandy Clay Loam

Slope: 0 to 2 percent
Geomorphic position: Bars on low strath terraces
Parent material: Fine-loamy alluvium derived from volcanic rocks over gravelly alluvium derived from andesite
Observed vegetation: Annual grasses and forbs, with blue oak, interior live oak, and buckeye at the higher elevations
Texture of the surface layer: Sandy clay loam
Percentage of the surface covered by rock fragments: 0 to 30 percent medium, rounded gravel, 0 to 5 percent rounded cobbles, 0 to 2 percent rounded stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Occasional
Annual ponding frequency: None
Depth to a water table (zone of saturation): 13 to 60 inches
Available water capacity: Low (about 3.0 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 55 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; sandy clay loam
Bt1—2 to 10 inches; gravelly sandy clay loam
Bt2—10 to 19 inches; gravelly sandy clay loam
C1—19 to 28 inches; extremely gravelly sandy loam
C2—28 to 38 inches; extremely gravelly loamy coarse sand
C3—38 to 46 inches; extremely gravelly sandy clay loam
2Cr—46 inches; bedrock

Characteristics of Hamslough Clay

Slope: 0 to 2 percent
Geomorphic position: Channels on low strath terraces
Parent material: Clayey alluvium over gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: 0 to 20 percent medium, rounded gravel, 0 to 25 percent rounded cobbles
Depth to a restrictive feature: 20 to 40 inches to a duripan; 44 to 88 inches to paralithic bedrock
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Occasional
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 80 inches
Available water capacity: Very low (about 2.3 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Storie index: 15 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 3 inches; clay
A2—3 to 14 inches; cobbly clay
Bw—14 to 19 inches; extremely gravelly clay
Bg—19 to 27 inches; extremely gravelly sandy clay
2Bqm—27 inches; duripan

Minor Components in Map Unit 675

Soils that are less than 40 inches deep to bedrock
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on low strath terraces
Hydric soil status: Not hydric

Redsluff taxadjunct and similar soils
Composition: 3 percent
Slope: 0 to 2 percent
Geomorphic position: Strath terraces
Hydric soil status: Not hydric

Soils that are frequently flooded
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Flood plains
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to lithic bedrock
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Strath terraces
Hydric soil status: Not hydric

Anita soils with a gravelly duripan and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Clayey swales on strath terraces
Hydric soil status: Hydric

Typic Haploxeralfs, very stony, and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Strath terraces in canyons
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Channels and vernal pools on low strath terraces
Hydric soil status: Hydric

676—Carhart-Anita taxadjunct complex, 0 to 12 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 140 to 495 feet (44 to 152 meters)
Mean annual precipitation: 25 to 30 inches (635 to 762 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Carhart clay—50 percent
Anita taxadjunct clay—40 percent
Minor components—10 percent

Characteristics of Carhart Clay

Slope: 0 to 12 percent
Geomorphic position: Basins, toeslopes, footslopes, and head slopes on volcanic hills
Parent material: Clayey alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subrounded gravel, 0 to 5 percent subrounded cobbles
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Occasional
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Low (about 4.5 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; clay
Bssg1—2 to 12 inches; clay

Bssg2—12 to 24 inches; clay
Bssg3—24 to 30 inches; clay
2Crtk—30 inches; bedrock

Characteristics of Anita Taxadjunct Clay

Slope: 0 to 12 percent
Geomorphic position: Basins, toeslopes, footslopes, and head slopes on volcanic hills
Parent material: Clayey alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subrounded gravel, 0 to 10 percent subrounded cobbles
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 20 inches
Available water capacity: Very low (about 1.2 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7w-2
Land capability, nonirrigated: 7w-2
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; clay
Bg—2 to 6 inches; clay
Bssg—6 to 11 inches; clay
2Cr—11 inches; bedrock

Minor Components in Map Unit 676

Anita soils with a gravelly duripan and similar soils
Composition: 6 percent
Slope: 0 to 2 percent
Geomorphic position: Basins on strath terraces on volcanic hills
Hydric soil status: Hydric

Loamy soils that are 2 to 20 inches deep to bedrock
Composition: 2 percent
Slope: 0 to 12 percent
Geomorphic position: Knobs on volcanic hills
Hydric soil status: Not hydric

Clearhayes and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Strath terraces
Hydric soil status: Not hydric

677—Tuscan-Fallager-Anita, gravelly duripan, complex, 0 to 3 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, watershed, and homesite development
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 140 to 540 feet (43 to 165 meters)
Mean annual precipitation: 24 to 35 inches (610 to 889 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Tuscan gravelly loam—40 percent
Fallager loam—25 percent
Anita gravelly clay, gravelly duripan—15 percent
Minor components—20 percent

Characteristics of Tuscan Gravelly Loam

Slope: 0 to 3 percent
Geomorphic position: Mounds on strath terraces
Parent material: Loamy alluvium over clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 25 percent medium, rounded gravel, 0 to 5 percent rounded cobbles
Depth to a restrictive feature: 10 to 20 inches to a duripan; 11 to 56 inches to paralithic bedrock
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 2 to 20 inches
- *Available water capacity:* Very low (about 1.5 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* Very high

Interpretive groups
- *Land capability, irrigated:* 7s-8
- *Land capability, nonirrigated:* 7s-8
- *Storie index:* 23 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* D

Typical profile
- A—0 to 2 inches; gravelly loam
- Bt1—2 to 4 inches; clay loam
- Bt2—4 to 7 inches; gravelly clay
- Bt3—7 to 11 inches; cobbly clay
- 2Bqm—11 inches; cemented, gravelly duripan

Characteristics of Fallager Loam

Slope: 0 to 3 percent
Geomorphic position: Swales on strath terraces
Parent material: Loamy alluvium over clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, rounded gravel, 0 to 25 percent rounded cobbles
Depth to a restrictive feature: 4 to 10 inches to a duripan; 5 to 46 inches to paralithic bedrock
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 10 inches
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Storie index: 22 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 1 inch; loam
Bt1—1 to 3 inches; gravelly clay loam
2Bt2—3 to 7 inches; gravelly clay
3Bqm—7 inches; cemented, gravelly duripan

Characteristics of Anita Gravelly Clay, Gravelly Duripan

Slope: 0 to 1 percent
Geomorphic position: Clayey swales on strath terraces
Parent material: Clayey alluvium over cemented, gravelly alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Gravelly clay
Percentage of the surface covered by rock fragments: 0 to 10 percent medium, subrounded gravel, 0 to 60 percent subrounded cobbles
Depth to a restrictive feature: 10 to 20 inches to a duripan; 11 to 56 inches to paralithic bedrock
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: Frequent
Depth to a water table (zone of saturation): 0 to 20 inches
Available water capacity: Very low (about 1.7 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7w-2
Land capability, nonirrigated: 7w-2
Storie index: 9 (revised)
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 3 inches; gravelly clay
Bss1—3 to 8 inches; gravelly clay
Bss2—8 to 15 inches; gravelly clay
2Bkqm—15 inches; cemented, gravelly duripan

Minor Components in Map Unit 677

Redtough and similar soils
Composition: 10 percent
Slope: 0 to 3 percent
Geomorphic position: Mounds on strath terraces
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools on strath terraces
Hydric soil status: Hydric

Soils that do not have a duripan and are 10 to 20 inches deep to bedrock
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Mounds on reworked strath terraces
Hydric soil status: Not hydric

Soils that do not have a duripan and are 2 to 10 inches deep to bedrock
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Swales on reworked strath terraces
Hydric soil status: Not hydric

Carhart and similar soils
Composition: 1 percent
Slope: 0 to 3 percent
Geomorphic position: Clay flats on strath terraces
Hydric soil status: Hydric

Soils on riser slopes
Composition: 1 percent
Slope: 10 to 35 percent
Geomorphic position: Riser slopes on strath terraces
Hydric soil status: Not hydric

Soils that are 2 to 20 inches deep to lithic bedrock
Composition: 1 percent
Slope: 0 to 3 percent
Geomorphic position: Strath terraces
Hydric soil status: Not hydric

679—Lucksev-Butteside-Carhart complex, 2 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, watershed, and homesite development
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 140 to 760 feet (43 to 232 meters)
Mean annual precipitation: 24 to 35 inches (610 to 889 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Lucksev loam—40 percent
Butteside gravelly loam—35 percent
Carhart clay—15 percent
Minor components—10 percent

Characteristics of Lucksev Loam

Slope: 2 to 15 percent
Geomorphic position: Strath terraces and volcanic ridges, buttes, and hills
Parent material: Loamy alluvium and/or residuum over clayey alluvium and/or residuum weathered from volcanic rocks
Observed vegetation: Annual grasses and forbs, with blue oak at the higher elevations
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 15 percent fine gravel, 0 to 20 percent cobbles, 0 to 5 percent stones, 0 to 2 percent boulders
Depth to a restrictive feature (paralithic bedrock): 4 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 2 to 20 inches
- *Available water capacity:* Very low (about 2.4 inches)
- *Natural drainage class:* Moderately well drained
- *Surface runoff (bare conditions):* Very high

Interpretive groups
- *Land capability, irrigated:* 6e-1
- *Land capability, nonirrigated:* 6e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* D

Typical profile
- A—0 to 2 inches; loam
- Bt1—2 to 7 inches; clay loam
- Bt2—7 to 15 inches; clay
- 2Crq—15 inches; bedrock

Characteristics of Butteside Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: Strath terraces and volcanic ridges, buttes, and hills

Parent material: Loamy alluvium and/or residuum over clayey alluvium and/or residuum weathered from volcanic rocks
Observed vegetation: Annual grasses and forbs, with blue oak and foothill pine at the higher elevations
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 15 percent fine gravel, 0 to 25 percent cobbles, 0 to 10 percent stones, 0 to 1 percent boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.2 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 8 inches; clay loam
Bt2—8 to 13 inches; clay loam
Bt3—13 to 27 inches; clay
2Crtq—27 inches; bedrock

Characteristics of Carhart Clay

Slope: 2 to 15 percent
Geomorphic position: Footslopes and head slopes on volcanic ridges, buttes, and hills
Parent material: Clayey alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subrounded gravel, 0 to 5 percent subrounded cobbles
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Very high (LEP of more than 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 0 to 40 inches
Available water capacity: Low (about 4.5 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; clay
Bssg1—2 to 12 inches; clay
Bssg2—12 to 24 inches; clay
Bssg3—24 to 30 inches; clay
2Crtk—30 inches; bedrock

Minor Components in Map Unit 679

Ultic Haploxeralfs and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Strath terraces and side slopes on volcanic hills
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Strath terraces and side slopes on volcanic hills
Hydric soil status: Not hydric

Fine-loamy soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Strath terraces and side slopes on volcanic hills
Hydric soil status: Not hydric

Anita taxadjunct and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Clay flats on volcanic hills
Hydric soil status: Hydric

Rock outcrop
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Strath terraces and side slopes on volcanic hills
Hydric soil status: Not hydric

Loamy soils
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Strath terraces and side slopes on volcanic hills
Hydric soil status: Not hydric

680—Lucksev-Butteside complex, 15 to 35 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 180 to 695 feet (55 to 213 meters)
Mean annual precipitation: 25 to 35 inches (635 to 889 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Lucksev loam—45 percent
Butteside gravelly loam—40 percent
Minor components—15 percent

Characteristics of Lucksev Loam

Slope: 15 to 35 percent
Geomorphic position: Side slopes on volcanic ridges, buttes, and hills
Parent material: Loamy colluvium over clayey residuum weathered from volcanic rocks
Observed vegetation: Annual grasses and forbs, with blue oak at the higher elevations
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: 0 to 15 percent fine gravel, 0 to 20 percent cobbles, 0 to 5 percent stones, 0 to 2 percent boulders
Depth to a restrictive feature (paralithic bedrock): 4 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.4 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; loam
Bt1—2 to 7 inches; clay loam
Bt2—7 to 15 inches; clay
2Crq—15 inches; bedrock

Characteristics of Butteside Gravelly Loam

Slope: 15 to 35 percent
Geomorphic position: Side slopes on volcanic ridges, buttes, and hills
Parent material: Loamy colluvium over clayey residuum weathered from volcanic rocks
Observed vegetation: Annual grasses and forbs, with blue oak, foothill pine, and California buckeye at the higher elevations
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 15 percent fine gravel, 0 to 25 percent cobbles, 0 to 10 percent stones, 0 to 1 percent boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.2 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 8 inches; clay loam
Bt2—8 to 13 inches; clay loam
Bt3—13 to 27 inches; clay
2Crtq—27 inches; bedrock

Minor Components in Map Unit 680

Ultic Haploxeralfs and similar soils
Composition: 4 percent
Slope: 15 to 35 percent
Geomorphic position: Side slopes on volcanic ridges, buttes, and hills
Hydric soil status: Not hydric

Rock outcrop
Composition: 4 percent
Slope: 15 to 35 percent
Geomorphic position: Side slopes on volcanic ridges, buttes, and hills
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 15 to 35 percent
Geomorphic position: Side slopes on volcanic ridges, buttes, and hills
Hydric soil status: Not hydric

Fine-loamy soils
Composition: 2 percent
Slope: 15 to 35 percent
Geomorphic position: Side slopes on volcanic ridges, buttes, and hills
Hydric soil status: Not hydric

Loamy soils
Composition: 2 percent
Slope: 15 to 35 percent
Geomorphic position: Side slopes on volcanic ridges, buttes, and hills
Hydric soil status: Not hydric

Anita taxadjunct and similar soils
Composition: 1 percent
Slope: 15 to 35 percent
Geomorphic position: Side slopes on volcanic ridges, buttes, and hills
Hydric soil status: Not hydric

683—Typic Haploxeralfs, magnesic, low elevation-Earlal-Rock outcrop complex, 3 to 15 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat, watershed, and homesite development

Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,495 to 2,400 feet (457 to 732 meters)
Mean annual precipitation: 45 to 55 inches (1,143 to 1,397 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 230 to 250 days

Map Unit Composition

Typic Haploxeralfs, magnesic, low elevation—50 percent
Earlal very gravelly loam—20 percent
Rock outcrop (serpentinite)—15 percent
Minor components—15 percent

Characteristics of Typic Haploxeralfs, Magnesic, Low Elevation

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on serpentinite mountains
Parent material: Gravelly and clayey colluvium and/or residuum weathered from serpentinite
Observed vegetation: Manzanita, buckbrush, California laurel, foothill pine, canyon live oak, and blue oak
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 20 to 80 percent medium, subangular gravel, 5 to 35 percent subangular cobbles, 0 to 25 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 2.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-9
Land capability, nonirrigated: 7e-9
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 3 inches; very gravelly loam
Bt1—3 to 10 inches; very gravelly clay loam
Bt2—10 to 21 inches; very cobbly clay loam
Bt3—21 to 30 inches; very gravelly clay
R—30 inches; bedrock

Characteristics of Earlal Very Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on serpentinite mountains
Parent material: Gravelly residuum weathered from serpentinite
Observed vegetation: Whiteleaf manzanita, foothill pine, buckbrush, canyon live oak, California laurel, blue oak, toyon, and annual grasses and forbs
Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 20 to 50 percent medium, angular gravel, 20 to 30 percent angular cobbles, 10 to 20 percent angular stones, 5 to 15 percent angular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-9
Land capability, nonirrigated: 7e-9
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 3 inches; very gravelly loam
Bt1—3 to 7 inches; very gravelly clay loam
Bt2—7 to 14 inches; extremely gravelly clay loam
R—14 inches; bedrock

Characteristics of Rock Outcrop (Serpentinite)

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on serpentinite mountains
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 683

At an elevation of less than 1,700 feet, soils with a thermic soil temperature regime
Composition: 10 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on ultramafic hills
Hydric soil status: Not hydric

Soils that are more than 40 inches deep to bedrock
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on serpentinite mountains
Hydric soil status: Not hydric

Boxrobber and similar soils
Composition: 1 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Hydric soil status: Not hydric

Millerridge and similar soils
Composition: 1 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Hydric soil status: Not hydric

684—Typic Haploxeralfs, magnesic, low elevation-Earlal-Rock outcrop complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,640 to 2,335 feet (500 to 713 meters)
Mean annual precipitation: 45 to 55 inches (1,143 to 1,397 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 230 to 250 days

Map Unit Composition

Typic Haploxeralfs, magnesic, low elevation—50 percent
Earlal very gravelly loam—20 percent
Rock outcrop (serpentinite)—15 percent
Minor components—15 percent

Characteristics of Typic Haploxeralfs, Magnesic, Low Elevation

Slope: 15 to 30 percent
Geomorphic position: Side slopes on serpentinite mountains
Parent material: Gravelly and clayey residuum and/or colluvium derived from serpentinite
Observed vegetation: Manzanita, buckbrush, California laurel, foothill pine, canyon live oak, and blue oak
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 20 to 80 percent medium, subangular gravel, 5 to 35 percent subangular cobbles, 0 to 25 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 2.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-9
Land capability, nonirrigated: 7e-9
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
A—0 to 3 inches; very gravelly loam
Bt1—3 to 10 inches; very gravelly clay loam
Bt2—10 to 21 inches; very cobbly clay loam
Bt3—21 to 30 inches; very gravelly clay
R—30 inches; bedrock

Characteristics of Earlal Very Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on serpentinite mountains
Parent material: Gravelly residuum and/or colluvium derived from serpentinite
Observed vegetation: Whiteleaf manzanita, foothill pine, buckbrush, canyon live oak, California laurel, blue oak, toyon, and annual grasses and forbs
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 20 to 50 percent medium, angular gravel, 20 to 30 percent angular cobbles, 10 to 20 percent angular stones, 5 to 15 percent angular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-9
Land capability, nonirrigated: 7e-9
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 3 inches; very gravelly loam
Bt1—3 to 7 inches; very gravelly clay loam
Bt2—7 to 14 inches; extremely gravelly clay loam
R—14 inches; bedrock

Characteristics of Rock Outcrop (Serpentinite)

Slope: 15 to 30 percent
Geomorphic position: Side slopes on serpentinite mountains
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 684

At an elevation of less than 1,700 feet, soils with a thermic soil temperature regime
Composition: 10 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on ultramafic hills
Hydric soil status: Not hydric

Soils that are more than 40 inches deep to bedrock
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on serpentinite mountains
Hydric soil status: Not hydric

Boxrobber and similar soils
Composition: 1 percent
Slope: 15 to 30 percent

Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Millerridge and similar soils
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

685—Bosquejo taxadjunct clay, 0 to 2 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, watershed, and cropland
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 170 to 535 feet (53 to 164 meters)
Mean annual precipitation: 24 to 30 inches (610 to 762 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 255 days

Map Unit Composition

Bosquejo taxadjunct, gravelly substratum—70 percent
Minor components—30 percent

Characteristics of Bosquejo Taxadjunct, Gravelly Substratum

Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Parent material: Clayey alluvium over gravelly alluvium over sandy alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs
Texture of the surface layer: Clay
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subrounded gravel, 0 to 3 percent subrounded cobbles
Depth to a restrictive feature: 40 to 80 inches to dense material; 80 to 180 inches to paralithic bedrock
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: Occasional
Depth to a water table (zone of saturation): 12 to 60 inches
Available water capacity: Moderate (about 5.7 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 5w-5
Land capability, nonirrigated: 5w-5
Storie index: 34 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A1—0 to 3 inches; clay

A2—3 to 8 inches; clay
Bss1—8 to 17 inches; clay
Bss2—17 to 27 inches; clay
2Btq1—27 to 33 inches; gravelly clay
2Btq2—33 to 41 inches; very gravelly sandy clay
2Btq3—41 to 55 inches; very gravelly sandy clay
3Bdq1—55 to 70 inches; dense sandy loam
3Bdq2—70 to 81 inches; dense sandy loam

Minor Components in Map Unit 685

Bosquejo taxadjunct clay loam and similar soils
Composition: 12 percent
Slope: 0 to 2 percent
Geomorphic position: Bars on stream terraces
Hydric soil status: Not hydric

Redsluff taxadjunct and similar soils
Composition: 7 percent
Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Hamslough and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Channels on stream terraces
Hydric soil status: Hydric

Clearhayes and similar soils
Composition: 3 percent
Slope: 0 to 1 percent
Geomorphic position: Low strath terraces
Hydric soil status: Not hydric

Butteside and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Strath terraces
Hydric soil status: Not hydric

Soils that are frequently ponded for long periods
Composition: 1 percent
Slope: 0 to 1 percent
Geomorphic position: Vernal pools and channels on stream terraces
Hydric soil status: Hydric

686—Redsluff taxadjunct clay loam, 0 to 2 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, watershed, cropland, and homesite development
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 150 to 600 feet (46 to 183 meters)
Mean annual precipitation: 26 to 36 inches (660 to 914 millimeters)

Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Redsluff taxadjunct clay loam—70 percent
Minor components—30 percent

Characteristics of Redsluff Taxadjunct Clay Loam

Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Parent material: Clayey alluvium derived from volcanic rocks over gravelly alluvium derived from andesite
Observed vegetation: Annual grasses and forbs, valley oak, foothill pine, blue oak, California sycamore, Douglas sagewort, and Pacific poison oak
Texture of the surface layer: Clay loam
Percentage of the surface covered by rock fragments: 0 to 5 percent medium, subrounded gravel, 0 to 3 percent subrounded cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 85 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Depth to a water table (zone of saturation): 36 to 60 inches
Available water capacity: High (about 9.0 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 2s-11
Land capability, nonirrigated: 3s-11
Storie index: 80 (revised)
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Ap—0 to 4 inches; clay loam
Bt1—4 to 10 inches; sandy clay
Bt2—10 to 21 inches; clay loam
Bt3—21 to 32 inches; sandy clay loam
Bt4—32 to 42 inches; sandy clay loam
2Bt5—42 to 53 inches; gravelly clay loam
2Bt6—53 to 68 inches; extremely gravelly sandy clay loam
2Bt7—68 to 75 inches; gravelly sandy clay loam
3Cr—75 to 80 inches; bedrock

Minor Components in Map Unit 686

Bosquejo taxadjunct clay and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Soils that are more than 40 inches deep to a duripan
Composition: 5 percent
Slope: 0 to 2 percent

Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Redsluff taxadjunct, nongravelly, and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Redsluff taxadjunct, occasionally flooded, and similar soils
Composition: 5 percent
Slope: 0 to 1 percent
Geomorphic position: Low stream terraces
Hydric soil status: Not hydric

Redsluff and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Stream terraces
Hydric soil status: Not hydric

Clearhayes and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Low strath terraces
Hydric soil status: Not hydric

687—Xerorthents, shallow-Typic Haploxeralfs complex, 2 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Livestock grazing, homesite development, wildlife habitat, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 275 to 1,000 feet (85 to 305 meters)
Mean annual precipitation: 27 to 32 inches (686 to 813 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Xerorthents, shallow—45 percent
Typic Haploxeralfs gravelly loam—40 percent
Minor components—15 percent

Characteristics of Xerorthents, Shallow

Slope: 2 to 15 percent
Geomorphic position: Footslopes in canyons
Parent material: Loamy residuum, colluvium, and/or alluvium derived from volcanic rocks
Observed vegetation: Annual grasses and forbs, buckbrush, and blue oak
Texture of the surface layer: Gravelly clay loam
Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 40 percent subangular stones, 0 to 40 percent subangular boulders

Depth to a restrictive feature: 2 to 20 inches to paralithic bedrock; 2 to 20 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.1 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7s-8
Land capability, nonirrigated: 7s-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; gravelly clay loam
Bt1—2 to 5 inches; gravelly clay loam
Bt2—5 to 8 inches; very cobbly clay loam
2R—8 inches; bedrock

Characteristics of Typic Haploxeralfs Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: Footslopes in canyons
Parent material: Loamy residuum, colluvium, and/or alluvium derived from volcanic rocks
Observed vegetation: Interior live oak, blue oak, foothill pine, buckbrush, manzanita, Pacific poison oak, toyon, and annual grasses and forbs
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 0 to 25 percent fine, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders
Depth to a restrictive feature: 20 to 60 inches to paralithic bedrock; 20 to 60 inches to lithic bedrock
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 2 inches; gravelly loam
Bt1—2 to 8 inches; gravelly clay loam
Bt2—8 to 16 inches; very gravelly clay loam

Bt3—16 to 27 inches; very gravelly clay loam
Bt4—27 to 40 inches; very gravelly clay loam
2Cr—40 inches; bedrock

Minor Components in Map Unit 687

Rock outcrop
Composition: 6 percent
Slope: 2 to 15 percent
Geomorphic position: Footslopes in canyons
Hydric soil status: Not hydric

Lithic Haploxeralfs and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Footslopes in canyons
Hydric soil status: Not hydric

Carhart and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Areas around seeps on footslopes in canyons
Hydric soil status: Hydric

Aquic Durixeralfs and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Drainageways on footslopes in canyons
Hydric soil status: Hydric

700—Retsongulch-Flumewall complex, 70 to 100 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Watershed, wildlife habitat, and timber production
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 4,595 feet (610 to 1,402 meters)
Mean annual precipitation: 70 to 78 inches (1,778 to 1,981 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 170 days

Map Unit Composition

Retsongulch very gravelly sandy loam—40 percent
Flumewall gravelly sandy loam—25 percent
Minor components—35 percent

Characteristics of Retsongulch Very Gravelly Sandy Loam

Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Parent material: Gravelly residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, tanoak, canyon live oak, ponderosa pine, California black oak, incense cedar, whiteleaf manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 80 percent medium, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly sandy loam
Bt1—3 to 12 inches; very gravelly sandy clay loam
Bt2—12 to 21 inches; extremely gravelly sandy clay loam
Bt3—21 to 30 inches; extremely gravelly sandy loam
R—30 inches; bedrock

Characteristics of Flumewall Gravelly Sandy Loam

Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Parent material: Gravelly residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Canyon live oak, Douglas-fir, ponderosa pine, tanoak, California black oak, incense cedar, whiteleaf manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 25 percent medium, angular gravel, 0 to 25 percent angular cobbles, 0 to 15 percent angular stones
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 2 inches; gravelly sandy loam

Bt1—2 to 7 inches; very gravelly sandy loam
Bt2—7 to 18 inches; extremely stony sandy clay loam
R—18 inches; bedrock

Minor Components in Map Unit 700

Rock outcrop
Composition: 10 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 2 to 10 inches deep to bedrock
Composition: 10 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Obskel and similar soils
Composition: 8 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Obstruction and similar soils
Composition: 7 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

701—Powellton-Obstruction complex, 50 to 70 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,200 to 3,595 feet (671 to 1,097 meters)
Mean annual precipitation: 67 to 72 inches (1,702 to 1,829 millimeters)
Mean annual air temperature: 54 degrees F (12 degrees C)
Frost-free period: 150 to 175 days

Map Unit Composition

Powellton gravelly loam—40 percent
Obstruction gravelly sandy loam—30 percent
Minor components—30 percent

Characteristics of Powellton Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Parent material: Fine-loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, tanoak, canyon live oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 inch to 2 inches; moderately decomposed plant material
A—2 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly loam
Bt2—9 to 15 inches; loam
Bt3—15 to 24 inches; clay loam
Bt4—24 to 30 inches; clay loam
Bt5—30 to 41 inches; silt loam
Bt6—41 to 61 inches; loam
Bt7—61 to 83 inches; loam

Characteristics of Obstruction Gravelly Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Parent material: Fine-loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, tanoak, canyon live oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 35 percent fine, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 96 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 4 inches; slightly decomposed plant material
A—4 to 7 inches; gravelly sandy loam
Bt1—7 to 10 inches; gravelly sandy clay loam
Bt2—10 to 18 inches; gravelly fine sandy loam
Bt3—18 to 25 inches; gravelly sandy clay loam
Bt4—25 to 33 inches; sandy clay loam
Bt5—33 to 44 inches; fine sandy loam
Bt6—44 to 64 inches; gravelly fine sandy loam
Bt7—64 to 84 inches; gravelly fine sandy loam
Cr—84 inches; bedrock

Minor Components in Map Unit 701

Obskel and similar soils
Composition: 12 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Retsongulch and similar soils
Composition: 8 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Coarse-loamy soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Rock outcrop
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

702—Cerpone-Typic Haploxeralfs, magnesic-Earlal complex, 3 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,595 to 3,395 feet (792 to 1,036 meters)
Mean annual precipitation: 55 to 65 inches (1,397 to 1,651 millimeters)

Mean annual air temperature: 55 degrees F (13 degrees C)
Frost-free period: 185 to 230 days

Map Unit Composition

Cerpone gravelly loam—50 percent
Typic Haploxeralfs, magnesic, very gravelly loam—20 percent
Earlal very gravelly loam—15 percent
Minor components—15 percent

Characteristics of Cerpone Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Parent material: Fine-loamy residuum weathered from ultramafic rocks
Observed vegetation: Jeffrey pine, incense cedar, ponderosa pine, foothill pine, whiteleaf manzanita, California laurel, and buckbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-9
Land capability, nonirrigated: 3e-9
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly loam
Bt2—9 to 17 inches; cobbly loam
Bt3—17 to 26 inches; gravelly clay loam
Bt4—26 to 41 inches; very gravelly silty clay loam
Bt5—41 to 57 inches; very gravelly silty clay loam
R—57 inches; bedrock

Characteristics of Typic Haploxeralfs, Magnesic, Very Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Parent material: Gravelly and clayey residuum weathered from serpentinite
Observed vegetation: Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, and scattered Jeffrey pine and incense cedar
Texture of the surface layer: Very gravelly loam

Percentage of the surface covered by rock fragments: 10 to 80 percent medium, subangular gravel, 5 to 35 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 80 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-9
Land capability, nonirrigated: 7e-9
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 3 inches; very gravelly loam
Bt1—3 to 7 inches; gravelly clay loam
Bt2—7 to 12 inches; very gravelly clay loam
Bt3—12 to 18 inches; gravelly clay
Bt4—18 to 24 inches; very gravelly clay
Btss1—24 to 32 inches; very gravelly clay
Btss2—32 to 42 inches; very gravelly clay
B´t5—42 to 54 inches; extremely cobbly clay loam
R—54 inches; bedrock

Characteristics of Earlal Very Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Parent material: Gravelly residuum weathered from serpentinite
Observed vegetation: Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, Jeffrey pine, and ponderosa pine
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 20 to 50 percent medium, angular gravel, 20 to 30 percent angular cobbles, 10 to 20 percent angular stones, 5 to 15 percent angular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-9
Land capability, nonirrigated: 7e-9
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 3 inches; very gravelly loam
Bt1—3 to 7 inches; very gravelly clay loam
Bt2—7 to 14 inches; extremely gravelly clay loam
R—14 inches; bedrock

Minor Components in Map Unit 702

Rock outcrop
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Hydric soil status: Not hydric

Surnuf and similar soils
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metavolcanic mountains
Hydric soil status: Not hydric

Griffgulch and similar soils
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metavolcanic mountains
Hydric soil status: Not hydric

703—Cerpone-Typic Haploxeralfs, magnesic-Earlal-Rock outcrop complex, 15 to 30 percent slopes.

Map Unit Setting

General location: Eastern Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,200 to 3,595 feet (671 to 1,097 meters)
Mean annual precipitation: 52 to 65 inches (1,321 to 1,651 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 185 to 235 days

Map Unit Composition

Cerpone gravelly loam—30 percent
Typic Haploxeralfs, magnesic, very gravelly loam—30 percent
Earlal very gravelly loam—15 percent
Rock outcrop (serpentinite)—15 percent
Minor components—10 percent

Characteristics of Cerpone Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from ultramafic rocks
Observed vegetation: Jeffrey pine, incense cedar, ponderosa pine, foothill pine, whiteleaf manzanita, California laurel, and buckbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 30 percent medium,

subangular gravel, 0 to 20 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-9
Land capability, nonirrigated: 4e-9
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly loam
Bt2—9 to 17 inches; cobbly loam
Bt3—17 to 26 inches; gravelly clay loam
Bt4—26 to 41 inches; very gravelly silty clay loam
Bt5—41 to 57 inches; very gravelly silty clay loam
R—57 inches; bedrock

Characteristics of Typic Haploxeralfs, Magnesic, Very Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic mountains
Parent material: Gravelly and clayey residuum and/or colluvium derived from serpentinite
Observed vegetation: Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, and scattered Jeffrey pine and incense cedar
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 10 to 80 percent medium, subangular gravel, 5 to 35 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 80 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-9
Land capability, nonirrigated: 7e-9
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 3 inches; very gravelly loam
Bt1—3 to 7 inches; gravelly clay loam
Bt2—7 to 12 inches; very gravelly clay loam
Bt3—12 to 18 inches; gravelly clay
Bt4—18 to 24 inches; very gravelly clay
Btss1—24 to 32 inches; very gravelly clay
Btss2—32 to 42 inches; very gravelly clay
B´t5—42 to 54 inches; extremely cobbly clay loam
R—54 inches; bedrock

Characteristics of Earlal Very Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic mountains
Parent material: Gravelly residuum weathered from serpentinite
Observed vegetation: Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, Jeffrey pine, and ponderosa pine
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 20 to 50 percent medium, angular gravel, 20 to 30 percent angular cobbles, 10 to 20 percent angular stones, 5 to 15 percent angular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-9
Land capability, nonirrigated: 7e-9
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 3 inches; very gravelly loam
Bt1—3 to 7 inches; very gravelly clay loam
Bt2—7 to 14 inches; extremely gravelly clay loam
R—14 inches; bedrock

Characteristics of Rock Outcrop (Serpentinite)

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on ultramafic mountains
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 703

Griffgulch and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Surnuf and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Spine taxadjunct and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Hydric soil status: Not hydric

704—Typic Haploxeralfs, magnesic-Earlal-Cerpone-Rock outcrop complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,000 to 3,545 feet (305 to 1,082 meters)
Mean annual precipitation: 52 to 65 inches (1,321 to 1,651 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 185 to 235 days

Map Unit Composition

Typic Haploxeralfs, magnesic, very gravelly loam—40 percent
Earlal very gravelly loam—20 percent
Cerpone gravelly loam—15 percent
Rock outcrop (serpentinite)—15 percent
Minor components—10 percent

Characteristics of Typic Haploxeralfs, Magnesic, Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on ultramafic mountains
Parent material: Gravelly and clayey colluvium derived from serpentinite
Observed vegetation: Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, and scattered Jeffrey pine and incense cedar
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 10 to 80 percent medium, subangular gravel, 5 to 35 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 80 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-9
Land capability, nonirrigated: 7e-9
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 3 inches; very gravelly loam
Bt1—3 to 7 inches; gravelly clay loam
Bt2—7 to 12 inches; very gravelly clay loam
Bt3—12 to 18 inches; gravelly clay
Bt4—18 to 24 inches; very gravelly clay
Btss1—24 to 32 inches; very gravelly clay
Btss2—32 to 42 inches; very gravelly clay
B´t5—42 to 54 inches; extremely cobbly clay loam
R—54 inches; bedrock

Characteristics of Earlal Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on ultramafic mountains
Parent material: Gravelly colluvium and/or residuum weathered from serpentinite
Observed vegetation: Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, Jeffrey pine, and ponderosa pine
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 20 to 50 percent medium, angular gravel, 20 to 30 percent angular cobbles, 10 to 20 percent angular stones, 5 to 15 percent angular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-9
Land capability, nonirrigated: 7e-9
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 3 inches; very gravelly loam
Bt1—3 to 7 inches; very gravelly clay loam
Bt2—7 to 14 inches; extremely gravelly clay loam
R—14 inches; bedrock

Characteristics of Cerpone Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on ultramafic mountains
Parent material: Fine-loamy colluvium derived from ultramafic rocks
Observed vegetation: Jeffrey pine, incense cedar, ponderosa pine, foothill pine, whiteleaf manzanita, California laurel, and buckbrush

Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-9
Land capability, nonirrigated: 6e-9
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly loam
Bt2—9 to 17 inches; cobbly loam
Bt3—17 to 26 inches; gravelly clay loam
Bt4—26 to 41 inches; very gravelly silty clay loam
Bt5—41 to 57 inches; very gravelly silty clay loam
R—57 inches; bedrock

Characteristics of Rock Outcrop (Serpentinite)

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on ultramafic mountains
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 704

At an elevation of less than 1,600 feet, soils with a thermic soil temperature regime
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on ultramafic mountains
Hydric soil status: Not hydric

Griffgulch and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metavolcanic mountains
Hydric soil status: Not hydric

Surnuf and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metavolcanic mountains
Hydric soil status: Not hydric

Spine taxadjunct and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metavolcanic mountains
Hydric soil status: Not hydric

705—Typic Haploxeralfs, magnesic-Earlal-Cerpone-Rock outcrop complex, 50 to 80 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 895 to 3,395 feet (274 to 1,036 meters)
Mean annual precipitation: 42 to 65 inches (1,067 to 1,651 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 185 to 250 days

Map Unit Composition

Typic Haploxeralfs, magnesic, very gravelly loam—35 percent
Earlal very gravelly loam—25 percent
Cerpone gravelly loam—15 percent
Rock outcrop (serpentinite)—15 percent
Minor components—10 percent

Characteristics of Typic Haploxeralfs, Magnesic, Very Gravelly Loam

Slope: 50 to 80 percent
Geomorphic position: Backslopes on ultramafic mountains and in canyons
Parent material: Gravelly and clayey colluvium derived from serpentinite
Observed vegetation: Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, and scattered Jeffrey pine and incense cedar
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 10 to 80 percent medium, subangular gravel, 5 to 35 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 15 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 80 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-9
Land capability, nonirrigated: 7e-9
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 3 inches; very gravelly loam
Bt1—3 to 7 inches; gravelly clay loam
Bt2—7 to 12 inches; very gravelly clay loam
Bt3—12 to 18 inches; gravelly clay
Bt4—18 to 24 inches; very gravelly clay
Btss1—24 to 32 inches; very gravelly clay
Btss2—32 to 42 inches; very gravelly clay
B´t5—42 to 54 inches; extremely cobbly clay loam
R—54 inches; bedrock

Characteristics of Earlal Very Gravelly Loam

Slope: 50 to 80 percent
Geomorphic position: Backslopes on ultramafic mountains and in canyons
Parent material: Gravelly colluvium derived from serpentinite
Observed vegetation: Annual grasses and forbs, whiteleaf manzanita, buckbrush, foothill pine, Jeffrey pine, and ponderosa pine
Texture of the surface layer: Very gravelly loam
Percentage of the surface covered by rock fragments: 20 to 50 percent medium, angular gravel, 20 to 30 percent angular cobbles, 10 to 20 percent angular stones, 5 to 15 percent angular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-9
Land capability, nonirrigated: 7e-9
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 3 inches; very gravelly loam
Bt1—3 to 7 inches; very gravelly clay loam
Bt2—7 to 14 inches; extremely gravelly clay loam
R—14 inches; bedrock

Characteristics of Cerpone Gravelly Loam

Slope: 50 to 80 percent
Geomorphic position: Backslopes on ultramafic mountains and in canyons
Parent material: Fine-loamy colluvium derived from ultramafic rocks
Observed vegetation: Jeffrey pine, incense cedar, ponderosa pine, foothill pine, whiteleaf manzanita, California laurel, and buckbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-9
Land capability, nonirrigated: 7e-9
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly loam
Bt2—9 to 17 inches; cobbly loam
Bt3—17 to 26 inches; gravelly clay loam
Bt4—26 to 41 inches; very gravelly silty clay loam
Bt5—41 to 57 inches; very gravelly silty clay loam
R—57 inches; bedrock

Characteristics of Rock Outcrop (Serpentinite)

Slope: 50 to 80 percent
Geomorphic position: Backslopes on ultramafic mountains and in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 705

Spine taxadjunct and similar soils
Composition: 3 percent
Slope: 50 to 80 percent
Geomorphic position: Backslopes on metavolcanic mountains and in canyons
Hydric soil status: Not hydric

At an elevation of less than 1,600 feet, soils with a thermic soil temperature regime
Composition: 3 percent
Slope: 50 to 80 percent
Geomorphic position: Backslopes on ultramafic hills and in canyons
Hydric soil status: Not hydric

Surnuf and similar soils
Composition: 2 percent
Slope: 50 to 80 percent
Geomorphic position: Backslopes on metavolcanic mountains and in canyons
Hydric soil status: Not hydric

Griffgulch and similar soils
Composition: 2 percent
Slope: 50 to 80 percent

Geomorphic position: Backslopes on metavolcanic mountains and in canyons
Hydric soil status: Not hydric

711—Dixmine-Toadtown complex, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,415 to 3,490 feet (1,042 to 1,064 meters)
Mean annual precipitation: 67 inches (1,702 millimeters)
Mean annual air temperature: 55 degrees F (13 degrees C)
Frost-free period: 180 days

Map Unit Composition

Dixmine very gravelly loam—45 percent
Toadtown loam—40 percent
Minor components—15 percent

Characteristics of Dixmine Very Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metavolcanic mountains
Parent material: Gravelly, loamy and clayey residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 5.2 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 3e-1
- *Land capability, nonirrigated:* 3e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 1 inch; slightly decomposed plant material
- Oe—1 to 2 inches; moderately decomposed plant material
- A—2 to 6 inches; very gravelly loam
- Bt1—6 to 11 inches; very gravelly loam
- Bt2—11 to 17 inches; gravelly loam
- Bt3—17 to 30 inches; very cobbly clay loam

Bt4—30 to 41 inches; very gravelly clay loam
Bt5—41 to 54 inches; extremely cobbly clay loam
Cr—54 inches; bedrock

Characteristics of Toadtown Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metavolcanic mountains
Parent material: Loamy and clayey residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A—3 to 5 inches; loam
Bt1—5 to 8 inches; loam
Bt2—8 to 13 inches; clay loam
Bt3—13 to 18 inches; clay
Bt4—18 to 27 inches; clay
Bt5—27 to 51 inches; clay loam
Bt6—51 to 65 inches; loam
Bt7—65 to 75 inches; loam
Crt—75 to 79 inches; loam

Minor Components in Map Unit 711

Mac and similar soils
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Hydric soil status: Not hydric

Nonskeletal soils that are 40 to 60 inches deep to bedrock
Composition: 4 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metavolcanic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metavolcanic mountains
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Hydric soil status: Not hydric

712—Dixmine-Toadtown complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,195 to 3,595 feet (975 to 1,097 meters)
Mean annual precipitation: 62 to 72 inches (1,575 to 1,829 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 155 to 190 days

Map Unit Composition

Dixmine very gravelly loam—50 percent
Toadtown loam—40 percent
Minor components—10 percent

Characteristics of Dixmine Very Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on metavolcanic mountains
Parent material: Gravelly, loamy and clayey colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 6 inches; very gravelly loam
Bt1—6 to 11 inches; very gravelly loam
Bt2—11 to 17 inches; gravelly loam
Bt3—17 to 30 inches; very cobbly clay loam
Bt4—30 to 41 inches; very gravelly clay loam
Bt5—41 to 54 inches; extremely cobbly clay loam
Cr—54 inches; bedrock

Characteristics of Toadtown Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on metavolcanic mountains
Parent material: Loamy and clayey colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A—3 to 5 inches; loam
Bt1—5 to 8 inches; loam
Bt2—8 to 13 inches; clay loam
Bt3—13 to 18 inches; clay
Bt4—18 to 27 inches; clay
Bt5—27 to 51 inches; clay loam
Bt6—51 to 65 inches; loam
Bt7—65 to 75 inches; loam
Crt—75 to 79 inches; loam

Minor Components in Map Unit 712

Mac and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on metamorphic mountains
Hydric soil status: Not hydric

Nonskeletal soils that are 40 to 60 inches deep to bedrock
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on metavolcanic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on metavolcanic mountains
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on metamorphic mountains
Hydric soil status: Not hydric

713—Dixmine-Toadtown complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,995 to 3,595 feet (914 to 1,097 meters)
Mean annual precipitation: 62 to 73 inches (1,575 to 1,854 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 155 to 190 days

Map Unit Composition

Dixmine very gravelly loam—50 percent
Toadtown loam—35 percent
Minor components—15 percent

Characteristics of Dixmine Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic mountains
Parent material: Gravelly, loamy and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones

Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 6 inches; very gravelly loam
Bt1—6 to 11 inches; very gravelly loam
Bt2—11 to 17 inches; gravelly loam
Bt3—17 to 30 inches; very cobbly clay loam
Bt4—30 to 41 inches; very gravelly clay loam
Bt5—41 to 54 inches; extremely cobbly clay loam
Cr—54 inches; bedrock

Characteristics of Toadtown Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic mountains
Parent material: Loamy and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material
A—3 to 5 inches; loam
Bt1—5 to 8 inches; loam
Bt2—8 to 13 inches; clay loam
Bt3—13 to 18 inches; clay
Bt4—18 to 27 inches; clay
Bt5—27 to 51 inches; clay loam
Bt6—51 to 65 inches; loam
Bt7—65 to 75 inches; loam
Crt—75 to 79 inches; loam

Minor Components in Map Unit 713

Mac and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic mountains
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

Nonskeletal soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic mountains
Hydric soil status: Not hydric

Haploxerults, loamy-skeletal, more than 60 inches deep to bedrock, and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metavolcanic mountains
Hydric soil status: Not hydric

Spine and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

714—Dixmine-Toadtown complex, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains

Elevation: 2,200 to 3,195 feet (671 to 975 meters)
Mean annual precipitation: 62 to 73 inches (1,575 to 1,854 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 155 to 190 days

Map Unit Composition

Dixmine very gravelly loam—50 percent
Toadtown loam—35 percent
Minor components—15 percent

Characteristics of Dixmine Very Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic mountains
Parent material: Gravelly, loamy and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 6 inches; very gravelly loam
Bt1—6 to 11 inches; very gravelly loam
Bt2—11 to 17 inches; gravelly loam
Bt3—17 to 30 inches; very cobbly clay loam
Bt4—30 to 41 inches; very gravelly clay loam
Bt5—41 to 54 inches; extremely cobbly clay loam
Cr—54 inches; bedrock

Characteristics of Toadtown Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic mountains
Parent material: Loamy and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, white fir, tanoak, sugar pine, California black oak, and deerbrush

Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A—3 to 5 inches; loam
Bt1—5 to 8 inches; loam
Bt2—8 to 13 inches; clay loam
Bt3—13 to 18 inches; clay
Bt4—18 to 27 inches; clay
Bt5—27 to 51 inches; clay loam
Bt6—51 to 65 inches; loam
Bt7—65 to 75 inches; loam
Crt—75 to 79 inches; loam

Minor Components in Map Unit 714

Mac and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

Haploxerults, loamy-skeletal, more than 60 inches deep to bedrock, and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic mountains
Hydric soil status: Not hydric

Nonskeletal soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 50 to 70 percent

Geomorphic position: Backslopes on metavolcanic mountains
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

Spine and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metavolcanic mountains
Hydric soil status: Not hydric

715—Logtrain-Bottlehill-Walkermine complex, 70 to 110 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,895 to 3,395 feet (579 to 1,036 meters)
Mean annual precipitation: 67 to 72 inches (1,702 to 1,829 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 145 to 175 days

Map Unit Composition

Logtrain gravelly loam—40 percent
Bottlehill very gravelly loam—30 percent
Walkermine very gravelly loam—20 percent
Minor components—10 percent

Characteristics of Logtrain Gravelly Loam

Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Parent material: Gravelly colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, tanoak, ponderosa pine, California black oak, canyon live oak, incense cedar, bigleaf maple, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 50 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 5.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 9 inches; very gravelly loam
Bt2—9 to 21 inches; very gravelly loam
Bt3—21 to 38 inches; very cobbly loam
Bt4—38 to 54 inches; extremely gravelly loam
R—54 inches; bedrock

Characteristics of Bottlehill Very Gravelly Loam

Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Parent material: Gravelly and loamy colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, tanoak, ponderosa pine, California black oak, canyon live oak, incense cedar, bigleaf maple, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 35 to 75 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 inch to 2 inches; moderately decomposed plant material
A1—2 to 4 inches; very gravelly loam
A2—4 to 9 inches; very gravelly loam
Bt1—9 to 13 inches; very gravelly loam
Bt2—13 to 22 inches; very gravelly loam
Bt3—22 to 33 inches; extremely gravelly clay loam
R—33 inches; bedrock

Characteristics of Walkermine Very Gravelly Loam

Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Parent material: Gravelly and loamy colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, tanoak, ponderosa pine, California black oak, canyon live oak, incense cedar, and bigleaf maple
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 75 percent coarse, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 4 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.7 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly loam
Bt—3 to 12 inches; very gravelly loam
R—12 inches; bedrock

Minor Components in Map Unit 715

Rock outcrop
Composition: 3 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Haploxerults with bedrock at a depth of more than 60 inches and similar soils
Composition: 3 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Scree
Composition: 2 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

716—Griffgulch-Surnuf complex, 3 to 15 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Timber production, homesite development, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,280 to 3,195 feet (695 to 975 meters)
Mean annual precipitation: 53 to 62 inches (1,346 to 1,575 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 180 to 240 days

Map Unit Composition

Griffgulch very gravelly silt loam—40 percent
Surnuf gravelly loam—40 percent
Minor components—20 percent

Characteristics of Griffgulch Very Gravelly Silt Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metavolcanic mountains
Parent material: Cobbly, silty and clayey residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, whiteleaf manzanita, California black oak, tanoak, Douglas-fir, Pacific poison oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 4.4 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Low

Interpretive groups
- *Land capability, irrigated:* 3e-1
- *Land capability, nonirrigated:* 3e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 2 inches; slightly decomposed plant material
- Oe—2 to 3 inches; moderately decomposed plant material
- A—3 to 7 inches; very gravelly silt loam
- Bt1—7 to 11 inches; very cobbly silty clay loam
- Bt2—11 to 20 inches; extremely cobbly silty clay loam
- Bt3—20 to 33 inches; very cobbly silty clay
- Bt4—33 to 47 inches; very cobbly clay
- Bt5—47 to 58 inches; extremely gravelly clay
- R—58 inches; bedrock

Characteristics of Surnuf Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metavolcanic mountains
Parent material: Silty and clayey residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, whiteleaf manzanita, California black oak, tanoak, Douglas-fir, Pacific poison oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 2 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly clay loam
Bt2—9 to 16 inches; gravelly clay loam
Bt3—16 to 27 inches; gravelly clay
Bt4—27 to 29 inches; gravelly clay
Bt5—29 to 56 inches; gravelly silty clay
Bt6—56 to 72 inches; silty clay

Minor Components in Map Unit 716

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils
Composition: 7 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metavolcanic mountains
Hydric soil status: Not hydric

Ultic Haploxeralfs, loamy-skeletal, and similar soils
Composition: 6 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metavolcanic mountains
Hydric soil status: Not hydric

Minniecreek and similar soils
Composition: 2 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metavolcanic mountains
Hydric soil status: Not hydric

Spine taxadjunct and similar soils
Composition: 2 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metavolcanic mountains
Hydric soil status: Not hydric

Soils that are less than 10 inches deep to bedrock
Composition: 2 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metavolcanic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metavolcanic mountains
Hydric soil status: Not hydric

717—Griffgulch-Surnuf complex, 15 to 30 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,200 to 3,355 feet (366 to 1,024 meters)
Mean annual precipitation: 53 to 62 inches (1,346 to 1,575 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 180 to 240 days

Map Unit Composition

Griffgulch very gravelly silt loam—40 percent
Surnuf gravelly loam—40 percent
Minor components—20 percent

Characteristics of Griffgulch Very Gravelly Silt Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Parent material: Cobbly, silty and clayey colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, whiteleaf manzanita, California black oak, tanoak, Douglas-fir, Pacific poison oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.4 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A—3 to 7 inches; very gravelly silt loam
Bt1—7 to 11 inches; very cobbly silty clay loam
Bt2—11 to 20 inches; extremely cobbly silty clay loam
Bt3—20 to 33 inches; very cobbly silty clay
Bt4—33 to 47 inches; very cobbly clay
Bt5—47 to 58 inches; extremely gravelly clay
R—58 inches; bedrock

Characteristics of Surnuf Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Parent material: Silty and clayey colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, whiteleaf manzanita, California black oak, tanoak, Douglas-fir, Pacific poison oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 2 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly clay loam
Bt2—9 to 16 inches; gravelly clay loam
Bt3—16 to 27 inches; gravelly clay
Bt4—27 to 29 inches; gravelly clay
Bt5—29 to 56 inches; gravelly silty clay
Bt6—56 to 72 inches; silty clay

Minor Components in Map Unit 717

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils
Composition: 7 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Ultic Haploxeralfs, loamy-skeletal, and similar soils
Composition: 6 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Minniecreek and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Spine taxadjunct and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Soils that are less than 10 inches deep to bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metavolcanic mountains
Hydric soil status: Not hydric

718—Griffgulch-Surnuf-Spine taxadjunct complex, 30 to 50 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 915 to 3,595 feet (280 to 1,097 meters)
Mean annual precipitation: 46 to 65 inches (1,168 to 1,651 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 180 to 240 days

Map Unit Composition

Griffgulch very gravelly silt loam—35 percent
Surnuf gravelly loam—35 percent

Spine taxadjunct very cobbly loam—15 percent
Minor components—15 percent

Characteristics of Griffgulch Very Gravelly Silt Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons and on metavolcanic mountains
Parent material: Cobbly, silty and clayey colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, California black oak, tanoak, Douglas-fir, Pacific poison oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A—3 to 7 inches; very gravelly silt loam
Bt1—7 to 11 inches; very cobbly silty clay loam
Bt2—11 to 20 inches; extremely cobbly silty clay loam
Bt3—20 to 33 inches; very cobbly silty clay
Bt4—33 to 47 inches; very cobbly clay
Bt5—47 to 58 inches; extremely gravelly clay
R—58 inches; bedrock

Characteristics of Surnuf Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons and on metavolcanic mountains
Parent material: Silty and clayey colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, whiteleaf manzanita, canyon live oak, California black oak, tanoak, Douglas-fir, Pacific poison oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 2 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly clay loam
Bt2—9 to 16 inches; gravelly clay loam
Bt3—16 to 27 inches; gravelly clay
Bt4—27 to 29 inches; gravelly clay
Bt5—29 to 56 inches; gravelly silty clay
Bt6—56 to 72 inches; silty clay

Characteristics of Spine Taxadjunct Very Cobbly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons and on metavolcanic mountains
Parent material: Cobbly and loamy residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, canyon live oak, whiteleaf manzanita, California black oak, tanoak, Douglas-fir, Pacific poison oak, and deerbrush
Texture of the surface layer: Very cobbly loam
Percentage of the surface covered by rock fragments: 25 to 80 percent medium, subangular gravel, 5 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; very cobbly loam
Bt—2 to 15 inches; very cobbly clay loam
R—15 inches; bedrock

Minor Components in Map Unit 718

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons and on metavolcanic mountains
Hydric soil status: Not hydric

Ultic Haploxeralfs, loamy-skeletal, and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons and on metavolcanic mountains
Hydric soil status: Not hydric

Minniecreek and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons and on metavolcanic mountains
Hydric soil status: Not hydric

Soils that are less than 10 inches deep to bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons and on metavolcanic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in canyons and on metavolcanic mountains
Hydric soil status: Not hydric

719—Griffgulch-Surnuf-Spine taxadjunct complex, 50 to 70 percent slopes

Map Unit Setting

General location: East-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 960 to 2,995 feet (293 to 914 meters)
Mean annual precipitation: 45 to 62 inches (1,143 to 1,575 millimeters)
Mean annual air temperature: 55 to 57 degrees F (13 to 14 degrees C)
Frost-free period: 180 to 240 days

Map Unit Composition

Griffgulch very gravelly silt loam—35 percent
Surnuf gravelly loam—30 percent
Spine taxadjunct very cobbly loam—20 percent
Minor components—15 percent

Characteristics of Griffgulch Very Gravelly Silt Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons

Parent material: Cobbly, silty and clayey colluvium derived from metavolcanic rocks
Observed vegetation: Canyon live oak, scrub oak, tanoak, California laurel, California black oak, Douglas-fir, ponderosa pine, foothill pine, Pacific poison oak, and whiteleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 30 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A—3 to 7 inches; very gravelly silt loam
Bt1—7 to 11 inches; very cobbly silty clay loam
Bt2—11 to 20 inches; extremely cobbly silty clay loam
Bt3—20 to 33 inches; very cobbly silty clay
Bt4—33 to 47 inches; very cobbly clay
Bt5—47 to 58 inches; extremely gravelly clay
R—58 inches; bedrock

Characteristics of Surnuf Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Silty and clayey colluvium derived from metavolcanic rocks
Observed vegetation: Canyon live oak, scrub oak, tanoak, California laurel, California black oak, Douglas-fir, ponderosa pine, foothill pine, Pacific poison oak, and whiteleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 2 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.5 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly clay loam
Bt2—9 to 16 inches; gravelly clay loam
Bt3—16 to 27 inches; gravelly clay
Bt4—27 to 29 inches; gravelly clay
Bt5—29 to 56 inches; gravelly silty clay
Bt6—56 to 72 inches; silty clay

Characteristics of Spine Taxadjunct Very Cobbly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Cobbly and loamy residuum weathered from metavolcanic rocks
Observed vegetation: Canyon live oak, scrub oak, tanoak, California laurel, California black oak, Douglas-fir, ponderosa pine, foothill pine, Pacific poison oak, and whiteleaf manzanita
Texture of the surface layer: Very cobbly loam
Percentage of the surface covered by rock fragments: 25 to 80 percent medium, subangular gravel, 5 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 2 inches; very cobbly loam
Bt—2 to 15 inches; very cobbly clay loam
R—15 inches; bedrock

Minor Components in Map Unit 719

Rock outcrop
Composition: 4 percent
Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Ultic Haploxeralfs, loamy-skeletal, and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are less than 10 inches deep to bedrock
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Minniecreek and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

720—Dystroxerepts-Haploxeralfs-Rock outcrop complex, 70 to 110 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 18
Landscape: Northern Sierra Nevada foothills
Elevation: 675 to 2,595 feet (207 to 792 meters)
Mean annual precipitation: 40 to 67 inches (1,016 to 1,702 millimeters)
Mean annual air temperature: 54 to 61 degrees F (12 to 16 degrees C)
Frost-free period: 185 to 260 days

Map Unit Composition

Dystroxerepts extremely gravelly loam—40 percent
Haploxeralfs very gravelly loam—30 percent
Rock outcrop (metavolcanic)—15 percent
Minor components—15 percent

Characteristics of Dystroxerepts Extremely Gravelly Loam

Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Parent material: Gravelly and loamy colluvium derived from metamorphic rocks
Observed vegetation: Canyon live oak, scrub oak, foothill pine, California laurel, whiteleaf manzanita, buckbrush, toyon, Pacific poison oak, blue oak, interior live oak, and scattered Douglas-fir and ponderosa pine
Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 10 to 50 percent angular gravel, 10 to 30 percent angular cobbles, 10 to 30 percent angular stones, 0 to 30 percent angular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; extremely gravelly loam
Bt1—4 to 12 inches; extremely gravelly clay loam
Bt2—12 to 22 inches; extremely gravelly clay loam
Bt3—22 to 28 inches; extremely gravelly loam
Bt4—28 to 38 inches; extremely cobbly sandy clay loam
R—38 inches; bedrock

Characteristics of Haploxeralfs Very Gravelly Loam

Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Parent material: Gravelly and loamy colluvium derived from metamorphic rocks
Observed vegetation: Canyon live oak, scrub oak, foothill pine, California laurel, whiteleaf manzanita, buckbrush, toyon, Pacific poison oak, blue oak, interior live oak, and scattered Douglas-fir and ponderosa pine
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 50 percent coarse, subangular gravel, 5 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 20 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 4 inches; very gravelly loam
Bt1—4 to 9 inches; very gravelly clay loam
Bt2—9 to 13 inches; very gravelly clay loam
Bt3—13 to 22 inches; extremely gravelly clay loam
Bt4—22 to 31 inches; extremely gravelly clay loam
Bt5—31 to 47 inches; extremely gravelly clay loam
R—47 inches; bedrock

Characteristics of Rock Outcrop (Metavolcanic)

Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 720

Soils that are less than 20 inches deep to lithic bedrock
Composition: 7 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Griffgulch and similar soils
Composition: 3 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Mounthope and similar soils
Composition: 3 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Surnuf and similar soils
Composition: 1 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Typic Haploxeralfs, magnesic, and similar soils
Composition: 1 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

721—Haploxerands, granitic till, 2 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 4,700 to 5,800 feet (1,433 to 1,768 meters)

Mean annual precipitation: 80 to 90 inches (2,032 to 2,286 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 100 days

Map Unit Composition

Haploxerands, granitic till, medial sandy loam—70 percent
Minor components—30 percent

Characteristics of Haploxerands, Granitic Till, Medial Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on moraines
Parent material: Bouldery and sandy till derived from igneous rocks
Observed vegetation: White fir, ponderosa pine, sugar pine, incense cedar, California red fir, California black oak, Sierra chinquapin, greenleaf manzanita, and whitethorn ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 40 percent medium, subangular gravel, 5 to 40 percent subangular cobbles, 5 to 60 percent subangular stones, 5 to 60 percent subangular boulders
Depth to a restrictive feature (dense glacial till): 20 to 98 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 5 inches; medial sandy loam
A2—5 to 12 inches; medial sandy loam
AB—12 to 22 inches; stony medial sandy loam
2Bw1—22 to 41 inches; stony coarse sandy loam
2Bw2—41 to 55 inches; extremely bouldery coarse sandy loam
2Bw3—55 to 74 inches; extremely cobbly loamy coarse sand
2Bw4—74 to 87 inches; extremely bouldery loamy coarse sand

Minor Components in Map Unit 721

Haploxerands, volcanic till, and similar soils
Composition: 10 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on moraines
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to bedrock
Composition: 10 percent
Slope: 2 to 15 percent

Geomorphic position: Ridgetops and footslopes on moraines
Hydric soil status: Not hydric

Haploxerands and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Outwash terraces
Hydric soil status: Not hydric

Aquic Xerofluvents and similar soils
Composition: 3 percent
Slope: 0 to 3 percent
Geomorphic position: Meadows in mountain valleys
Hydric soil status: Hydric

Rock outcrop
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on mountains
Hydric soil status: Not hydric

722—Haploxerands, granitic till, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,900 to 5,600 feet (1,189 to 1,707 meters)
Mean annual precipitation: 80 to 90 inches (2,032 to 2,286 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 100 days

Map Unit Composition

Haploxerands, granitic till, medial sandy loam—70 percent
Minor components—30 percent

Characteristics of Haploxerands, Granitic Till, Medial Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on moraines
Parent material: Bouldery and sandy till derived from igneous rocks
Observed vegetation: White fir, ponderosa pine, sugar pine, incense cedar, California red fir, California black oak, Sierra chinquapin, greenleaf manzanita, and whitethorn ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 40 percent medium, subangular gravel, 5 to 40 percent subangular cobbles, 5 to 60 percent subangular stones, 5 to 60 percent subangular boulders
Depth to a restrictive feature (dense glacial till): 20 to 98 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed

Available water capacity: Low (about 3.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 5 inches; medial sandy loam
A2—5 to 12 inches; medial sandy loam
AB—12 to 22 inches; stony medial sandy loam
2Bw1—22 to 41 inches; stony coarse sandy loam
2Bw2—41 to 55 inches; extremely bouldery coarse sandy loam
2Bw3—55 to 74 inches; extremely cobbly loamy coarse sand
2Bw4—74 to 87 inches; extremely bouldery loamy coarse sand

Minor Components in Map Unit 722

Soils that are 20 to 60 inches deep to bedrock
Composition: 11 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on moraines
Hydric soil status: Not hydric

Haploxerands, volcanic till, and similar soils
Composition: 10 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on moraines
Hydric soil status: Not hydric

Rock outcrop
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on mountains
Hydric soil status: Not hydric

Haploxerands and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Outwash terraces
Hydric soil status: Not hydric

Aquic Xerofluvents and similar soils
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Meadows in mountain valleys
Hydric soil status: Hydric

723—Haploxerands, granitic till, 30 to 50 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed

Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,995 to 5,800 feet (1,219 to 1,768 meters)
Mean annual precipitation: 80 to 90 inches (2,032 to 2,286 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 100 days

Map Unit Composition

Haploxerands, granitic till, medial sandy loam—70 percent
Minor components—30 percent

Characteristics of Haploxerands, Granitic Till, Medial Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on moraines
Parent material: Bouldery and sandy till derived from igneous rocks
Observed vegetation: White fir, ponderosa pine, sugar pine, incense cedar, California red fir, California black oak, Sierra chinquapin, greenleaf manzanita, and whitethorn ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 40 percent medium, subangular gravel, 5 to 40 percent subangular cobbles, 5 to 60 percent subangular stones, 5 to 60 percent subangular boulders
Depth to a restrictive feature (dense glacial till): 20 to 98 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 5 inches; medial sandy loam
A2—5 to 12 inches; medial sandy loam
AB—12 to 22 inches; stony medial sandy loam
2Bw1—22 to 41 inches; stony coarse sandy loam
2Bw2—41 to 55 inches; extremely bouldery coarse sandy loam
2Bw3—55 to 74 inches; extremely cobbly loamy coarse sand
2Bw4—74 to 87 inches; extremely bouldery loamy coarse sand

Minor Components in Map Unit 723

Soils that are 20 to 60 inches deep to bedrock
Composition: 12 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on moraines
Hydric soil status: Not hydric

Haploxerands, volcanic till, and similar soils
Composition: 11 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on moraines
Hydric soil status: Not hydric

Rock outcrop
Composition: 7 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on mountains
Hydric soil status: Not hydric

724—Haploxerands, volcanic till, 2 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada and Southern Cascade Mountains
Elevation: 4,235 to 5,600 feet (1,292 to 1,707 meters)
Mean annual precipitation: 80 to 90 inches (2,032 to 2,286 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 100 days

Map Unit Composition

Haploxerands, volcanic till, cobbly medial sandy loam—75 percent
Minor components—25 percent

Characteristics of Haploxerands, Volcanic Till, Cobbly Medial Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on moraines
Parent material: Bouldery and loamy till derived from igneous rocks
Observed vegetation: White fir, ponderosa pine, sugar pine, incense cedar, California red fir, California black oak, Sierra chinquapin, greenleaf manzanita, and whitethorn ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 40 percent medium, subangular gravel, 5 to 40 percent subangular cobbles, 5 to 60 percent subangular stones, 5 to 60 percent subangular boulders
Depth to a restrictive feature (dense glacial till): 20 to 98 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 4 inches; cobbly medial sandy loam
Bw—4 to 17 inches; cobbly medial sandy loam
Bt1—17 to 37 inches; gravelly sandy loam
Bt2—37 to 41 inches; gravelly sandy loam
2Cd1—41 to 52 inches; gravelly, dense glacial till
2Cd2—52 to 80 inches; gravelly, dense glacial till

Minor Components in Map Unit 724

Soils that are 20 to 60 inches deep to bedrock
Composition: 10 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on moraines
Hydric soil status: Not hydric

Haploxerands, granitic till, and similar soils
Composition: 7 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on moraines
Hydric soil status: Not hydric

Rock outcrop
Composition: 4 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on mountains
Hydric soil status: Not hydric

Haploxerands and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Outwash terraces
Hydric soil status: Not hydric

Aquic Xerofluvents and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Meadows in mountain valleys
Hydric soil status: Hydric

725—Haploxerands, volcanic till, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada and Southern Cascade Mountains
Elevation: 4,235 to 5,695 feet (1,292 to 1,737 meters)
Mean annual precipitation: 80 to 90 inches (2,032 to 2,286 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 100 days

Map Unit Composition

Haploxerands, volcanic till, cobbly medial sandy loam—75 percent
Minor components—25 percent

Characteristics of Haploxerands, Volcanic Till, Cobbly Medial Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on moraines
Parent material: Bouldery and loamy till derived from igneous rocks
Observed vegetation: White fir, ponderosa pine, sugar pine, incense cedar, California red fir, California black oak, Sierra chinquapin, greenleaf manzanita, and whitethorn ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 40 percent medium, subangular gravel, 5 to 40 percent subangular cobbles, 5 to 60 percent subangular stones, 5 to 60 percent subangular boulders
Depth to a restrictive feature (dense glacial till): 20 to 98 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 4 inches; cobbly medial sandy loam
Bw—4 to 17 inches; cobbly medial sandy loam
Bt1—17 to 37 inches; gravelly sandy loam
Bt2—37 to 41 inches; gravelly sandy loam
2Cd1—41 to 52 inches; gravelly, dense glacial till
2Cd2—52 to 80 inches; gravelly, dense glacial till

Minor Components in Map Unit 725

Soils that are 20 to 60 inches deep to bedrock
Composition: 10 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on moraines
Hydric soil status: Not hydric

Haploxerands, granitic till, and similar soils
Composition: 7 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on moraines
Hydric soil status: Not hydric

Rock outcrop
Composition: 6 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on mountains
Hydric soil status: Not hydric

Haploxerands and similar soils
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Outwash terraces
Hydric soil status: Not hydric

Aquic Xerofluvents and similar soils
Composition: 1 percent
Slope: 0 to 2 percent
Geomorphic position: Meadows in mountain valleys
Hydric soil status: Hydric

726—Haploxerands, volcanic till, 30 to 50 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada and Southern Cascade Mountains
Elevation: 4,235 to 5,400 feet (1,292 to 1,646 meters)
Mean annual precipitation: 80 to 90 inches (2,032 to 2,286 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 100 days

Map Unit Composition

Haploxerands, volcanic till, cobbly medial sandy loam—75 percent
Minor components—25 percent

Characteristics of Haploxerands, Volcanic Till, Cobbly Medial Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on moraines
Parent material: Bouldery and loamy till derived from igneous rocks
Observed vegetation: White fir, ponderosa pine, sugar pine, incense cedar, California red fir, California black oak, Sierra chinquapin, greenleaf manzanita, and whitethorn ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 40 percent medium, subangular gravel, 5 to 40 percent subangular cobbles, 5 to 60 percent subangular stones, 5 to 60 percent subangular boulders
Depth to a restrictive feature (dense glacial till): 20 to 98 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.5 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 4 inches; cobbly medial sandy loam
Bw—4 to 17 inches; cobbly medial sandy loam
Bt1—17 to 37 inches; gravelly sandy loam
Bt2—37 to 41 inches; gravelly sandy loam
2Cd1—41 to 52 inches; gravelly, dense glacial till
2Cd2—52 to 80 inches; gravelly, dense glacial till

Minor Components in Map Unit 726

Soils that are 20 to 60 inches deep to bedrock
Composition: 12 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on moraines
Hydric soil status: Not hydric

Rock outcrop
Composition: 8 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on mountains
Hydric soil status: Not hydric

Haploxerands, granitic till, and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on moraines
Hydric soil status: Not hydric

Beecee and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

727—Bonneyridge sandy loam, 1 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,670 to 4,665 feet (1,119 to 1,423 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)
Frost-free period: 95 to 170 days

Map Unit Composition

Bonneyridge sandy loam—85 percent
Minor components—15 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 1 to 15 percent
Geomorphic position: Ridgetops and flats on granitic mountains
Parent material: Coarse-loamy residuum weathered from quartz diorite
Observed vegetation: Ponderosa pine, white fir, Douglas-fir, incense cedar, sugar pine, tanoak, California black oak, whitethorn ceanothus, manzanita, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4e-4
Land capability, nonirrigated: 4e-4
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; sandy loam
A2—3 to 6 inches; sandy loam
Bw1—6 to 16 inches; coarse sandy loam
Bw2—16 to 22 inches; coarse sandy loam
Bw3—22 to 31 inches; coarse sandy loam
Bw4—31 to 39 inches; sandy loam
C1—39 to 56 inches; loamy coarse sand
C2—56 to 76 inches; gravelly loamy coarse sand

Minor Components in Map Unit 727

Chawanakee and similar soils
Composition: 5 percent
Slope: 1 to 15 percent
Geomorphic position: Knolls in mountains
Hydric soil status: Not hydric

Aquic Xerofluvents and similar soils
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Meadows in mountains
Hydric soil status: Hydric

Soils that are 20 to 40 inches deep to bedrock
Composition: 5 percent
Slope: 1 to 15 percent
Geomorphic position: Knolls in mountains
Hydric soil status: Not hydric

728—Bonneyridge sandy loam, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,670 to 4,665 feet (1,119 to 1,423 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)
Frost-free period: 95 to 170 days

Map Unit Composition

Bonneyridge sandy loam—85 percent
Minor components—15 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy colluvium derived from quartz diorite
Observed vegetation: Ponderosa pine, white fir, Douglas-fir, incense cedar, sugar pine, tanoak, California black oak, whitethorn ceanothus, manzanita, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; sandy loam
A2—3 to 6 inches; sandy loam
Bw1—6 to 16 inches; coarse sandy loam
Bw2—16 to 22 inches; coarse sandy loam

Bw3—22 to 31 inches; coarse sandy loam
Bw4—31 to 39 inches; sandy loam
C1—39 to 56 inches; loamy coarse sand
C2—56 to 76 inches; gravelly loamy coarse sand

Minor Components in Map Unit 728

Soils that are 20 to 40 inches deep to bedrock
Composition: 7 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Chawanakee and similar soils
Composition: 6 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Aquic Xerofluvents and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Meadows in mountains
Hydric soil status: Hydric

729—Bonneyridge sandy loam, 30 to 50 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 4,100 to 4,560 feet (1,250 to 1,390 meters)
Mean annual precipitation: 74 to 77 inches (1,880 to 1,956 millimeters)
Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 110 to 145 days

Map Unit Composition

Bonneyridge sandy loam—85 percent
Minor components—15 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy colluvium derived from quartz diorite
Observed vegetation: Ponderosa pine, white fir, Douglas-fir, incense cedar, sugar pine, tanoak, California black oak, whitethorn ceanothus, manzanita, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; sandy loam
A2—3 to 6 inches; sandy loam
Bw1—6 to 16 inches; coarse sandy loam
Bw2—16 to 22 inches; coarse sandy loam
Bw3—22 to 31 inches; coarse sandy loam
Bw4—31 to 39 inches; sandy loam
C1—39 to 56 inches; loamy coarse sand
C2—56 to 76 inches; gravelly loamy coarse sand

Minor Components in Map Unit 729

Soils that are 20 to 40 inches deep to bedrock
Composition: 8 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Chawanakee and similar soils
Composition: 7 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

730—Tusccoll-Schott complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, watershed, and wildlife habitat
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 1,600 to 3,395 feet (488 to 1,036 meters)
Mean annual precipitation: 55 to 72 inches (1,397 to 1,829 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 160 to 215 days

Map Unit Composition

Tusccoll gravelly loam—60 percent
Schott very gravelly loam—25 percent
Minor components—15 percent

Characteristics of Tusccoll Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes in ravines and canyons
Parent material: Fine-loamy colluvium derived from volcanic breccia
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, California black oak, canyon live oak, whiteleaf manzanita, California laurel, bigleaf maple, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 6 inches; gravelly loam
Bt1—6 to 14 inches; gravelly loam
Bt2—14 to 23 inches; gravelly loam
Bt3—23 to 33 inches; gravelly clay loam
Bt4—33 to 41 inches; gravelly clay loam
Bt5—41 to 49 inches; gravelly clay loam
Bt6—49 to 70 inches; gravelly clay loam

Characteristics of Schott Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes in ravines and canyons
Parent material: Gravelly and loamy residuum and/or colluvium derived from volcanic breccia
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, California black oak, canyon live oak, whiteleaf manzanita, California laurel, bigleaf maple, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 6 inches; very gravelly loam
Bt1—6 to 13 inches; very gravelly clay loam
Bt2—13 to 22 inches; very cobbly clay loam
Bt3—22 to 40 inches; extremely gravelly clay loam
Bt4—40 to 50 inches; extremely gravelly sandy clay loam
R—50 inches; bedrock

Minor Components in Map Unit 730

Lydon soils, 20 to 35 percent clay, and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Beecee and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Lydon and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Andic Haploxeralfs with paralithic bedrock at a depth of 20 to 60 inches and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

731—Tusccoll-Schott complex, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, watershed, and wildlife habitat
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 1,600 to 3,395 feet (488 to 1,036 meters)
Mean annual precipitation: 55 to 72 inches (1,397 to 1,829 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 160 to 215 days

Map Unit Composition

Tusccoll gravelly loam—50 percent
Schott very gravelly loam—35 percent
Minor components—15 percent

Characteristics of Tusccoll Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Parent material: Fine-loamy colluvium derived from volcanic breccia
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, California black oak, canyon live oak, whiteleaf manzanita, California laurel, bigleaf maple, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 6 inches; gravelly loam
Bt1—6 to 14 inches; gravelly loam
Bt2—14 to 23 inches; gravelly loam
Bt3—23 to 33 inches; gravelly clay loam
Bt4—33 to 41 inches; gravelly clay loam

Bt5—41 to 49 inches; gravelly clay loam
Bt6—49 to 70 inches; gravelly clay loam

Characteristics of Schott Very Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Parent material: Gravelly and loamy residuum and/or colluvium derived from volcanic breccia
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, California black oak, canyon live oak, whiteleaf manzanita, California laurel, bigleaf maple, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 6 inches; very gravelly loam
Bt1—6 to 13 inches; very gravelly clay loam
Bt2—13 to 22 inches; very cobbly clay loam
Bt3—22 to 40 inches; extremely gravelly clay loam
Bt4—40 to 50 inches; extremely gravelly sandy clay loam
R—50 inches; bedrock

Minor Components in Map Unit 731

Beecee and similar soils
Composition: 4 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Andic Haploxeralfs with paralithic bedrock at a depth of 20 to 60 inches and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Lydon soils, 20 to 35 percent clay, and similar soils
Composition: 3 percent

Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Lydon and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

732—Bonepile taxadjunct, 2 to 8 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Homesite development, timber production, wildlife habitat, and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 4,300 to 4,595 feet (1,311 to 1,402 meters)
Mean annual precipitation: 69 to 75 inches (1,753 to 1,905 millimeters)
Mean annual air temperature: 48 to 52 degrees F (9 to 11 degrees C)
Frost-free period: 105 to 115 days

Map Unit Composition

Bonepile taxadjunct, duripan substratum—90 percent
Minor components—10 percent

Characteristics of Bonepile Taxadjunct, Duripan Substratum

Slope: 2 to 8 percent
Geomorphic position: Stream terraces in mountains
Parent material: Gravelly alluvium over cemented, gravelly alluvium derived from volcanic rocks
Observed vegetation: Ponderosa pine, incense cedar, Douglas-fir, white fir, California black oak, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 40 percent medium, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 40 percent subangular stones, 0 to 20 percent subangular boulders
Depth to a restrictive feature (duripan): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Depth to a water table (zone of saturation): 37 to 72 inches
Available water capacity: Very low (about 2.4 inches)
Natural drainage class: Moderately well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 4e-3
Land capability, nonirrigated: 4e-3
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 4 inches; gravelly medial sandy loam
A2—4 to 7 inches; very gravelly medial sandy loam
AB—7 to 15 inches; very gravelly medial sandy loam
Bw1—15 to 30 inches; extremely gravelly sandy loam
Bw2—30 to 37 inches; extremely cobbly sandy clay loam
2Bt—37 to 47 inches; extremely gravelly clay loam
2Bqm—47 inches; duripan

Minor Components in Map Unit 732

Xerofluvents and similar soils
Composition: 4 percent
Slope: 0 to 5 percent
Geomorphic position: Flood plains in mountains
Hydric soil status: Not hydric

Soils that are more than 60 inches deep to a duripan
Composition: 4 percent
Slope: 2 to 8 percent
Geomorphic position: Stream terraces in mountains
Hydric soil status: Not hydric

Endoaquolls and similar soils
Composition: 2 percent
Slope: 0 to 2 percent
Geomorphic position: Meadows in mountains
Hydric soil status: Hydric

733—Haploxeralfs, terrace, 0 to 5 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Wildlife habitat, homesite development, and watershed
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 400 to 1,400 feet (122 to 427 meters)
Mean annual precipitation: 30 to 55 inches (762 to 1,397 millimeters)
Mean annual air temperature: 55 to 61 degrees F (13 to 16 degrees C)
Frost-free period: 230 to 260 days

Map Unit Composition

Haploxeralfs, terrace, gravelly loam—75 percent
Minor components—25 percent

Characteristics of Haploxeralfs, Terrace, Gravelly Loam

Slope: 0 to 8 percent
Geomorphic position: Stream terraces in canyons

Parent material: Bouldery and loamy alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: Annual grasses and forbs, blue oak, valley oak, live oak, and foothill pine
Texture of the surface layer: Gravelly loam
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, rounded gravel, 0 to 15 percent rounded cobbles, 0 to 5 percent rounded stones, 0 to 5 percent rounded boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups, Terraces
Land capability, irrigated: 3e-7
Land capability, nonirrigated: 3e-7
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
A—0 to 5 inches; gravelly loam
Bt1—5 to 11 inches; gravelly loam
Bt2—11 to 18 inches; very gravelly loam
Bt3—18 to 32 inches; very cobbly clay loam
Bt4—32 to 48 inches; extremely cobbly clay loam
Bt5—48 to 63 inches; extremely cobbly sandy clay loam

Minor Components in Map Unit 733

Xerofluvents and similar soils
Composition: 10 percent
Slope: 0 to 4 percent
Geomorphic position: Flood plains in canyons
Hydric soil status: Not hydric

Haploxeralfs, terrace, nongravelly, and similar soils
Composition: 5 percent
Slope: 0 to 8 percent
Geomorphic position: Stream terraces in canyons
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to bedrock
Composition: 4 percent
Slope: 0 to 8 percent
Geomorphic position: Strath terraces in canyons
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to a duripan
Composition: 3 percent
Slope: 0 to 8 percent
Geomorphic position: Stream terraces in canyons
Hydric soil status: Not hydric

Soils on riser slopes
Composition: 3 percent
Slope: 8 to 35 percent
Geomorphic position: Riser slopes on stream terraces in canyons
Hydric soil status: Not hydric

734—Haploxerands-Aquic Xerofluvents complex, 0 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 4,195 to 5,200 feet (1,280 to 1,585 meters)
Mean annual precipitation: 76 to 82 inches (1,930 to 2,083 millimeters)
Mean annual air temperature: 48 to 52 degrees F (9 to 11 degrees C)
Frost-free period: 90 to 130 days

Map Unit Composition

Haploxerands medial sandy loam—55 percent
Aquic Xerofluvents peaty very fine sandy loam—35 percent
Minor components—10 percent

Characteristics of Haploxerands Medial Sandy Loam

Slope: 0 to 15 percent
Geomorphic position: Terraces in mountain valleys
Parent material: Sandy and gravelly alluvium derived from igneous rocks
Observed vegetation: White fir, sugar pine, California red fir, ponderosa pine, incense cedar, California black oak, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 35 percent coarse, subrounded gravel, 0 to 15 percent subrounded cobbles, 0 to 5 percent subrounded stones, 0 to 5 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 118 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A1—0.5 inch to 2 inches; medial sandy loam

A2—2 to 5 inches; gravelly medial sandy loam
Bw1—5 to 12 inches; medial sandy loam
Bw2—12 to 23 inches; gravelly medial sandy loam
Bw3—23 to 30 inches; gravelly coarse sandy loam
Bw4—30 to 42 inches; gravelly coarse sandy loam
Bw5—42 to 60 inches; gravelly coarse sandy loam
Bw6—60 to 80 inches; coarse sandy loam

Characteristics of Aquic Xerofluvents Peaty Very Fine Sandy Loam

Slope: 0 to 8 percent
Geomorphic position: Meadows in mountain valleys
Parent material: Stratified, sandy alluvium derived from quartz diorite
Observed vegetation: Carex, *Juncus*, annual grasses and forbs, willows, and alders
Texture of the surface layer: Peaty very fine sandy loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Frequent
Annual ponding frequency: None
Depth to a water table (zone of saturation): 0 to 17 inches
Available water capacity: Moderate (about 7.3 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 3 inches; peaty very fine sandy loam
A2—3 to 7 inches; mucky fine sandy loam
C—7 to 16 inches; gravelly coarse sandy loam
Ab—16 to 19 inches; mucky fine sandy loam
C´—19 to 23 inches; gravelly sandy loam
A´b—23 to 35 inches; mucky very fine sandy loam
C´´—35 to 49 inches; gravelly loamy coarse sand
A´´b—49 to 63 inches; peaty fine sandy loam
C´´´—63 to 71 inches; gravelly loamy coarse sand
A´´´b—71 to 80 inches; mucky fine sandy loam

Minor Components in Map Unit 734

Haploxerands skeletal and similar soils
Composition: 3 percent
Slope: 0 to 15 percent
Geomorphic position: Terraces in mountain valleys
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to dense glacial till
Composition: 3 percent
Slope: 0 to 15 percent
Geomorphic position: Terraces in mountain valleys
Hydric soil status: Not hydric

Bonneyridge sandy loam and similar soils
Composition: 2 percent
Slope: 0 to 15 percent
Geomorphic position: Footslopes in mountain valleys
Hydric soil status: Not hydric

Soils on riser slopes
Composition: 2 percent
Slope: 15 to 35 percent
Geomorphic position: Riser slopes on terraces in mountain valleys
Hydric soil status: Not hydric

735—Fluvaquents, loamy, 0 to 3 percent slopes

Map Unit Setting

General location: Central Butte County
Major uses: Livestock grazing, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 2,155 feet (610 to 658 meters)
Mean annual precipitation: 55 to 57 inches (1,397 to 1,448 millimeters)
Mean annual air temperature: 55 degrees F (13 degrees C)
Frost-free period: 210 to 230 days

Map Unit Composition

Fluvaquents loam—80 percent
Minor components—20 percent

Characteristics of Fluvaquents Loam

Slope: 0 to 3 percent
Geomorphic position: Stream terraces in mountain valleys
Parent material: Stratified, sandy and silty alluvium derived from igneous and metamorphic rocks
Observed vegetation: Annual grasses and forbs, ponderosa pine, California black oak, white alder, willows, bigleaf maple, blackberry, and *Carex*
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent fine, rounded gravel
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None
Depth to a water table (zone of saturation): 10 to 40 inches
Available water capacity: High (about 10.0 inches)
Natural drainage class: Somewhat poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Hydric soil status: Hydric
Hydrologic soil group: C

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A1—0.5 inch to 2 inches; loam
A2—2 to 9 inches; loam
Bw1—9 to 18 inches; sandy clay loam
Bw2—18 to 24 inches; silt loam
C1—24 to 27 inches; sandy loam
C2—27 to 37 inches; silt loam
Agb1—37 to 45 inches; loam
Agb2—45 to 65 inches; sandy clay loam
Agb3—65 to 70 inches; sandy clay loam
Agb3—65 to 70 inches; sandy loam
2Cg—70 to 85 inches; sandy clay loam

Minor Components in Map Unit 735

Fluvaquents, gravelly, and similar soils
Composition: 10 percent
Slope: 0 to 3 percent
Geomorphic position: Terraces in mountain valleys
Hydric soil status: Hydric

Xerofluvents and similar soils
Composition: 5 percent
Slope: 0 to 3 percent
Geomorphic position: Flood plains in mountain valleys
Hydric soil status: Not hydric

Islandbar and similar soils
Composition: 3 percent
Slope: 0 to 3 percent
Geomorphic position: Footslopes in mountain valleys
Hydric soil status: Not hydric

Featherfalls sandy loam and similar soils
Composition: 2 percent
Slope: 0 to 3 percent
Geomorphic position: Footslopes in mountain valleys
Hydric soil status: Not hydric

801—Obstruction gravelly sandy loam, 3 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,835 to 5,360 feet (1,170 to 1,634 meters)
Mean annual precipitation: 67 to 78 inches (1,702 to 1,981 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 100 to 175 days

Map Unit Composition

Obstruction gravelly sandy loam—70 percent
Minor components—30 percent

Characteristics of Obstruction Gravelly Sandy Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Parent material: Fine-loamy residuum over coarse-loamy residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, white fir, Douglas-fir, sugar pine, incense cedar, California black oak, tanoak, whitethorn ceanothus, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 35 percent fine, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 96 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 4 inches; slightly decomposed plant material
A—4 to 7 inches; gravelly sandy loam
Bt1—7 to 10 inches; gravelly sandy clay loam
Bt2—10 to 18 inches; gravelly fine sandy loam
Bt3—18 to 25 inches; gravelly sandy clay loam
Bt4—25 to 33 inches; sandy clay loam
Bt5—33 to 44 inches; fine sandy loam
Bt6—44 to 64 inches; gravelly fine sandy loam
Bt7—64 to 84 inches; gravelly fine sandy loam
Cr—84 inches; bedrock

Minor Components in Map Unit 801

Coarse-loamy soils
Composition: 12 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Hydric soil status: Not hydric

Obskel and similar soils
Composition: 10 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 5 percent
Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metamorphic mountains
Hydric soil status: Not hydric

Retsongulch and similar soils
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Hydric soil status: Not hydric

802—Obskel-Obstruction complex, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,995 to 5,320 feet (914 to 1,622 meters)
Mean annual precipitation: 66 to 78 inches (1,676 to 1,981 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 100 to 175 days

Map Unit Composition

Obskel very gravelly sandy loam—40 percent
Obstruction gravelly sandy loam—40 percent
Minor components—20 percent

Characteristics of Obskel Very Gravelly Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Gravelly, coarse-loamy residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, white fir, Douglas-fir, sugar pine, incense cedar, California black oak, tanoak, whitethorn ceanothus, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 35 percent medium, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 to 1 inch; moderately decomposed plant material
A—1 to 4 inches; very gravelly sandy loam
Bt1—4 to 9 inches; very gravelly sandy loam
Bt2—9 to 19 inches; very gravelly sandy loam
Bt3—19 to 30 inches; very gravelly loam
Bt4—30 to 56 inches; very gravelly loam
Cr—56 inches; bedrock

Characteristics of Obstruction Gravelly Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Fine-loamy over coarse-loamy colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, white fir, Douglas-fir, sugar pine, incense cedar, California black oak, tanoak, whitethorn ceanothus, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 35 percent fine, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 96 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)

Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups

Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 4 inches; slightly decomposed plant material
A—4 to 7 inches; gravelly sandy loam
Bt1—7 to 10 inches; gravelly sandy clay loam
Bt2—10 to 18 inches; gravelly fine sandy loam
Bt3—18 to 25 inches; gravelly sandy clay loam
Bt4—25 to 33 inches; sandy clay loam
Bt5—33 to 44 inches; fine sandy loam
Bt6—44 to 64 inches; gravelly fine sandy loam
Bt7—64 to 84 inches; gravelly fine sandy loam
Cr—84 inches; bedrock

Minor Components in Map Unit 802

Coarse-loamy soils

Composition: 12 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Retsongulch and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

803—Obskel-Obstruction complex, 30 to 50 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,795 to 5,360 feet (853 to 1,634 meters)
Mean annual precipitation: 66 to 78 inches (1,676 to 1,981 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 100 to 175 days

Map Unit Composition

Obskel very gravelly sandy loam—40 percent
Obstruction gravelly sandy loam—40 percent
Minor components—20 percent

Characteristics of Obskel Very Gravelly Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metamorphic mountains
Parent material: Gravelly, coarse-loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Ponderosa pine, white fir, Douglas-fir, sugar pine, incense cedar, California black oak, tanoak, whitethorn ceanothus, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 35 percent medium, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 to 1 inch; moderately decomposed plant material
A—1 to 4 inches; very gravelly sandy loam
Bt1—4 to 9 inches; very gravelly sandy loam
Bt2—9 to 19 inches; very gravelly sandy loam
Bt3—19 to 30 inches; very gravelly loam
Bt4—30 to 56 inches; very gravelly loam
Cr—56 inches; bedrock

Characteristics of Obstruction Gravelly Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metamorphic mountains
Parent material: Fine-loamy over coarse-loamy colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, white fir, Douglas-fir, sugar pine, incense cedar, California black oak, tanoak, whitethorn ceanothus, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 35 percent fine, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 96 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 4 inches; slightly decomposed plant material
A—4 to 7 inches; gravelly sandy loam
Bt1—7 to 10 inches; gravelly sandy clay loam
Bt2—10 to 18 inches; gravelly fine sandy loam
Bt3—18 to 25 inches; gravelly sandy clay loam
Bt4—25 to 33 inches; sandy clay loam
Bt5—33 to 44 inches; fine sandy loam
Bt6—44 to 64 inches; gravelly fine sandy loam
Bt7—64 to 84 inches; gravelly fine sandy loam
Cr—84 inches; bedrock

Minor Components in Map Unit 803

Coarse-loamy soils
Composition: 12 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metamorphic mountains
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metamorphic mountains
Hydric soil status: Not hydric

Retsongulch and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metamorphic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metamorphic mountains
Hydric soil status: Not hydric

804—Obskel-Obstruction-Retsongulch complex, 50 to 70 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Watershed, wildlife habitat, and timber production
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,795 to 5,515 feet (853 to 1,682 meters)
Mean annual precipitation: 66 to 78 inches (1,676 to 1,981 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 175 days

Map Unit Composition

Obskel very gravelly sandy loam—35 percent
Obstruction gravelly sandy loam—25 percent
Retsongulch very gravelly sandy loam—20 percent
Minor components—20 percent

Characteristics of Obskel Very Gravelly Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Parent material: Gravelly, coarse-loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Ponderosa pine, tanoak, Douglas-fir, California black oak, canyon live oak, incense cedar, sugar pine, whiteleaf manzanita, deerbrush, and dogwood

Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 35 percent medium, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 to 1 inch; moderately decomposed plant material
A—1 to 4 inches; very gravelly sandy loam
Bt1—4 to 9 inches; very gravelly sandy loam
Bt2—9 to 19 inches; very gravelly sandy loam
Bt3—19 to 30 inches; very gravelly loam
Bt4—30 to 56 inches; very gravelly loam
Cr—56 inches; bedrock

Characteristics of Obstruction Gravelly Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Parent material: Fine-loamy over coarse-loamy colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, tanoak, Douglas-fir, California black oak, canyon live oak, incense cedar, sugar pine, whiteleaf manzanita, deerbrush, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 35 percent fine, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 96 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1

Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 4 inches; slightly decomposed plant material
A—4 to 7 inches; gravelly sandy loam
Bt1—7 to 10 inches; gravelly sandy clay loam
Bt2—10 to 18 inches; gravelly fine sandy loam
Bt3—18 to 25 inches; gravelly sandy clay loam
Bt4—25 to 33 inches; sandy clay loam
Bt5—33 to 44 inches; fine sandy loam
Bt6—44 to 64 inches; gravelly fine sandy loam
Bt7—64 to 84 inches; gravelly fine sandy loam
Cr—84 inches; bedrock

Characteristics of Retsongulch Very Gravelly Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Parent material: Gravelly residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Canyon live oak, ponderosa pine, tanoak, Douglas-fir, California black oak, incense cedar, sugar pine, whiteleaf manzanita, deerbrush, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 80 percent medium, subangular gravel, 0 to 15 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly sandy loam
Bt1—3 to 12 inches; very gravelly sandy clay loam
Bt2—12 to 21 inches; extremely gravelly sandy clay loam
Bt3—21 to 30 inches; extremely gravelly sandy loam
R—30 inches; bedrock

Minor Components in Map Unit 804

Coarse-loamy soils
Composition: 12 percent
Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Rock outcrop
Composition: 4 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Flumewall and similar soils
Composition: 4 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

805—Bottlehill-Walkermine-Logtrain complex, 3 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,995 to 5,275 feet (1,219 to 1,609 meters)
Mean annual precipitation: 73 to 76 inches (1,854 to 1,930 millimeters)
Mean annual air temperature: 48 to 52 degrees F (9 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Bottlehill very gravelly loam—50 percent
Walkermine very gravelly loam—20 percent
Logtrain gravelly loam—20 percent
Minor components—10 percent

Characteristics of Bottlehill Very Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Parent material: Gravelly and loamy residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, incense cedar, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 35 to 75 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.1 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-4
Land capability, nonirrigated: 4e-4
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 inch to 2 inches; moderately decomposed plant material
A1—2 to 4 inches; very gravelly loam
A2—4 to 9 inches; very gravelly loam
Bt1—9 to 13 inches; very gravelly loam
Bt2—13 to 22 inches; very gravelly loam
Bt3—22 to 33 inches; extremely gravelly clay loam
R—33 inches; bedrock

Characteristics of Walkermine Very Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Parent material: Gravelly and loamy residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, incense cedar, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 75 percent coarse, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 4 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.7 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly loam
Bt—3 to 12 inches; very gravelly loam
R—12 inches; bedrock

Characteristics of Logtrain Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains

Parent material: Gravelly and loamy residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, incense cedar, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 50 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 5.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 9 inches; very gravelly loam
Bt2—9 to 21 inches; very gravelly loam
Bt3—21 to 38 inches; very cobbly loam
Bt4—38 to 54 inches; extremely gravelly loam
R—54 inches; bedrock

Minor Components in Map Unit 805

Haploxerults with bedrock at a depth of more than 60 inches and similar soils
Composition: 4 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to paralithic bedrock
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Hydric soil status: Not hydric

806—Bottlehill-Walkermine-Logtrain complex, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,995 to 5,200 feet (1,219 to 1,585 meters)
Mean annual precipitation: 73 to 76 inches (1,854 to 1,930 millimeters)
Mean annual air temperature: 48 to 52 degrees F (9 to 11 degrees C)
Frost-free period: 100 to 145 days

Map Unit Composition

Bottlehill very gravelly loam—50 percent
Walkermine very gravelly loam—20 percent
Logtrain gravelly loam—20 percent
Minor components—10 percent

Characteristics of Bottlehill Very Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, incense cedar, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 35 to 75 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 inch to 2 inches; moderately decomposed plant material
A1—2 to 4 inches; very gravelly loam
A2—4 to 9 inches; very gravelly loam

Bt1—9 to 13 inches; very gravelly loam
Bt2—13 to 22 inches; very gravelly loam
Bt3—22 to 33 inches; extremely gravelly clay loam
R—33 inches; bedrock

Characteristics of Walkermine Very Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, incense cedar, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 75 percent coarse, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 4 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.7 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly loam
Bt—3 to 12 inches; very gravelly loam
R—12 inches; bedrock

Characteristics of Logtrain Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, incense cedar, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 50 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 5.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 9 inches; very gravelly loam
Bt2—9 to 21 inches; very gravelly loam
Bt3—21 to 38 inches; very cobbly loam
Bt4—38 to 54 inches; extremely gravelly loam
R—54 inches; bedrock

Minor Components in Map Unit 806

Rock outcrop
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Haploxerults with bedrock at a depth of more than 60 inches and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to paralithic bedrock
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

807—Bottlehill-Logtrain-Walkermine complex, 30 to 50 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,995 to 5,200 feet (914 to 1,585 meters)
Mean annual precipitation: 68 to 76 inches (1,727 to 1,930 millimeters)
Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)
Frost-free period: 100 to 145 days

Map Unit Composition

Bottlehill very gravelly loam—35 percent
Logtrain gravelly loam—30 percent
Walkermine very gravelly loam—25 percent
Minor components—10 percent

Characteristics of Bottlehill Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic mountains
Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 35 to 75 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 inch to 2 inches; moderately decomposed plant material
A1—2 to 4 inches; very gravelly loam
A2—4 to 9 inches; very gravelly loam
Bt1—9 to 13 inches; very gravelly loam
Bt2—13 to 22 inches; very gravelly loam
Bt3—22 to 33 inches; extremely gravelly clay loam
R—33 inches; bedrock

Characteristics of Logtrain Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic mountains
Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 50 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 5.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 9 inches; very gravelly loam
Bt2—9 to 21 inches; very gravelly loam
Bt3—21 to 38 inches; very cobbly loam
Bt4—38 to 54 inches; extremely gravelly loam
R—54 inches; bedrock

Characteristics of Walkermine Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic mountains
Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 75 percent coarse, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 4 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.7 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly loam
Bt—3 to 12 inches; very gravelly loam
R—12 inches; bedrock

Minor Components in Map Unit 807

Rock outcrop
Composition: 6 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic mountains
Hydric soil status: Not hydric

Haploxerults with bedrock at a depth of more than 60 inches and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic mountains
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons and on metamorphic mountains
Hydric soil status: Not hydric

808—Bottlehill-Walkermine-Logtrain complex, 50 to 70 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,995 to 5,275 feet (914 to 1,609 meters)
Mean annual precipitation: 68 to 76 inches (1,727 to 1,930 millimeters)
Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)
Frost-free period: 100 to 145 days

Map Unit Composition

Bottlehill very gravelly loam—45 percent
Walkermine very gravelly loam—20 percent
Logtrain gravelly loam—20 percent
Minor components—15 percent

Characteristics of Bottlehill Very Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Gravelly and loamy colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 35 to 75 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 inch to 2 inches; moderately decomposed plant material
A1—2 to 4 inches; very gravelly loam
A2—4 to 9 inches; very gravelly loam
Bt1—9 to 13 inches; very gravelly loam
Bt2—13 to 22 inches; very gravelly loam
Bt3—22 to 33 inches; extremely gravelly clay loam
R—33 inches; bedrock

Characteristics of Walkermine Very Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Gravelly and loamy residuum and/or colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 75 percent coarse, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 4 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.7 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8

Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly loam
Bt—3 to 12 inches; very gravelly loam
R—12 inches; bedrock

Characteristics of Logtrain Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Gravelly and loamy colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 50 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 5.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 9 inches; very gravelly loam
Bt2—9 to 21 inches; very gravelly loam
Bt3—21 to 38 inches; very cobbly loam
Bt4—38 to 54 inches; extremely gravelly loam
R—54 inches; bedrock

Minor Components in Map Unit 808

Rock outcrop
Composition: 8 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Scree
Composition: 3 percent
Slope: 50 to 70 percent

Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Haploxerults with bedrock at a depth of more than 60 inches and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

809—Walkermine-Bottlehill-Logtrain-Rock outcrop complex, 70 to 110 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,595 to 5,155 feet (792 to 1,572 meters)
Mean annual precipitation: 72 to 74 inches (1,829 to 1,880 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 100 to 145 days

Map Unit Composition

Walkermine very gravelly loam—45 percent
Bottlehill very gravelly loam—15 percent
Logtrain gravelly loam—15 percent
Rock outcrop (metavolcanic)—15 percent
Minor components—10 percent

Characteristics of Walkermine Very Gravelly Loam

Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Parent material: Gravelly and loamy colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 75 percent coarse, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 4 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed

Available water capacity: Very low (about 0.7 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly loam
Bt—3 to 12 inches; very gravelly loam
R—12 inches; bedrock

Characteristics of Bottlehill Very Gravelly Loam

Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Parent material: Gravelly and loamy colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 35 to 75 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 inch to 2 inches; moderately decomposed plant material
A1—2 to 4 inches; very gravelly loam
A2—4 to 9 inches; very gravelly loam
Bt1—9 to 13 inches; very gravelly loam
Bt2—13 to 22 inches; very gravelly loam
Bt3—22 to 33 inches; extremely gravelly clay loam
R—33 inches; bedrock

Characteristics of Logtrain Gravelly Loam

Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons

Parent material: Gravelly and loamy colluvium derived from metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, incense cedar, sugar pine, canyon live oak, tanoak, California black oak, white fir, dwarf tanoak, greenleaf manzanita, Sierra chinquapin, and prostrate ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 50 percent medium, subangular gravel, 0 to 30 percent subangular cobbles, 0 to 20 percent subangular stones, 0 to 10 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 5.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 9 inches; very gravelly loam
Bt2—9 to 21 inches; very gravelly loam
Bt3—21 to 38 inches; very cobbly loam
Bt4—38 to 54 inches; extremely gravelly loam
R—54 inches; bedrock

Characteristics of Rock Outcrop (Metavolcanic)

Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 809

Scree
Composition: 5 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Haploxerults with bedrock at a depth of more than 60 inches and similar soils
Composition: 3 percent
Slope: 70 to 110 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 20 to 60 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 70 to 110 percent

Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

810—Dixmine-Mac-Spine complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra mountains
Elevation: 2,195 to 3,795 feet (670 to 1,158 meters)
Mean annual precipitation: 64 to 73 inches (1,626 to 1,854 millimeters)
Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)
Frost-free period: 140 to 200 days

Map Unit Composition

Dixmine very gravelly loam—35 percent
Mac gravelly loam—25 percent
Spine very gravelly loam—25 percent
Minor components—15 percent

Characteristics of Dixmine Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Parent material: Gravelly, loamy and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Douglas-fir, tanoak, California black oak, canyon live oak, ponderosa pine, sugar pine, bigleaf maple, incense cedar, manzanita, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 6 inches; very gravelly loam
Bt1—6 to 11 inches; very gravelly loam
Bt2—11 to 17 inches; gravelly loam
Bt3—17 to 30 inches; very cobbly clay loam
Bt4—30 to 41 inches; very gravelly clay loam
Bt5—41 to 54 inches; extremely cobbly clay loam
Cr—54 inches; bedrock

Characteristics of Mac Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Parent material: Fine-loamy residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Douglas-fir, tanoak, California black oak, canyon live oak, ponderosa pine, sugar pine, bigleaf maple, incense cedar, manzanita, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 50 percent medium gravel, 0 to 10 percent cobbles, 0 to 5 percent stones
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; very gravelly loam
Bt2—9 to 15 inches; gravelly silty clay loam
Bt3—15 to 23 inches; silty clay loam
Crt—23 to 37 inches; extremely gravelly silt loam
Cr—37 inches; bedrock

Characteristics of Spine Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Parent material: Gravelly colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Douglas-fir, tanoak, California black oak, canyon live oak, ponderosa pine, sugar pine, bigleaf maple, incense cedar, manzanita, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 20 to 60 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly loam
Bt1—3 to 9 inches; extremely gravelly loam
Bt2—9 to 16 inches; extremely gravelly clay loam
R—16 inches; bedrock

Minor Components in Map Unit 810

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Toadtown and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Haploxerults, loamy-skeletal, more than 60 inches deep to bedrock, and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Soils that are 2 to 10 inches deep to bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Beecee and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Soils that formed in hydraulic mining debris
Composition: 1 percent
Slope: 2 to 30 percent
Geomorphic position: The bottom of canyons
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

811—Powellton-Toadtown complex, 3 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,120 to 4,235 feet (951 to 1,292 meters)
Mean annual precipitation: 65 to 75 inches (1,651 to 1,905 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 140 to 180 days

Map Unit Composition

Powellton gravelly loam—50 percent
Toadtown loam—40 percent
Minor components—10 percent

Characteristics of Powellton Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Parent material: Fine-loamy residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, tanoak, sugar pine, Douglas-fir, incense cedar, white fir, whitevein shinleaf, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.3 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 inch to 2 inches; moderately decomposed plant material
A—2 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly loam
Bt2—9 to 15 inches; loam
Bt3—15 to 24 inches; clay loam
Bt4—24 to 30 inches; clay loam
Bt5—30 to 41 inches; silt loam
Bt6—41 to 61 inches; loam
Bt7—61 to 83 inches; loam

Characteristics of Toadtown Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Parent material: Clayey residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, tanoak, sugar pine, Douglas-fir, incense cedar, white fir, whitevein shinleaf, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A—3 to 5 inches; loam
Bt1—5 to 8 inches; loam
Bt2—8 to 13 inches; clay loam
Bt3—13 to 18 inches; clay
Bt4—18 to 27 inches; clay
Bt5—27 to 51 inches; clay loam

Bt6—51 to 65 inches; loam
Bt7—65 to 75 inches; loam
Crt—75 to 79 inches; loam

Minor Components in Map Unit 811

Dixmine and similar soils
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Hydric soil status: Not hydric

Endoaquolls loam and similar soils
Composition: 2 percent
Slope: 0 to 8 percent
Geomorphic position: Meadows in mountains
Hydric soil status: Hydric

Obstruction and similar soils
Composition: 2 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metamorphic mountains
Hydric soil status: Not hydric

812—Powellton-Toadtown complex, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,880 to 4,280 feet (878 to 1,305 meters)
Mean annual precipitation: 65 to 75 inches (1,651 to 1,905 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 140 to 180 days

Map Unit Composition

Powellton gravelly loam—50 percent
Toadtown loam—40 percent
Minor components—10 percent

Characteristics of Powellton Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, tanoak, sugar pine, Douglas-fir, incense cedar, white fir, whitevein shinleaf, and dogwood

Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 inch to 2 inches; moderately decomposed plant material
A—2 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly loam
Bt2—9 to 15 inches; loam
Bt3—15 to 24 inches; clay loam
Bt4—24 to 30 inches; clay loam
Bt5—30 to 41 inches; silt loam
Bt6—41 to 61 inches; loam
Bt7—61 to 83 inches; loam

Characteristics of Toadtown Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Parent material: Clayey colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, tanoak, sugar pine, Douglas-fir, incense cedar, white fir, whitevein shinleaf, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A—3 to 5 inches; loam
Bt1—5 to 8 inches; loam
Bt2—8 to 13 inches; clay loam
Bt3—13 to 18 inches; clay
Bt4—18 to 27 inches; clay
Bt5—27 to 51 inches; clay loam
Bt6—51 to 65 inches; loam
Bt7—65 to 75 inches; loam
Crt—75 to 79 inches; loam

Minor Components in Map Unit 812

Dixmine and similar soils
Composition: 6 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Obstruction and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

Mac and similar soils
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and side slopes on metamorphic mountains
Hydric soil status: Not hydric

813—Powellton-Toadtown complex, 30 to 50 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,555 to 4,080 feet (780 to 1,244 meters)
Mean annual precipitation: 70 to 75 inches (1,778 to 1,905 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 140 to 170 days

Map Unit Composition

Powellton gravelly loam—50 percent
Toadtown loam—40 percent
Minor components—10 percent

Characteristics of Powellton Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in ravines and on metamorphic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, tanoak, sugar pine, Douglas-fir, incense cedar, white fir, California black oak, whitevein shinleaf, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 inch to 2 inches; moderately decomposed plant material
A—2 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly loam
Bt2—9 to 15 inches; loam
Bt3—15 to 24 inches; clay loam
Bt4—24 to 30 inches; clay loam
Bt5—30 to 41 inches; silt loam
Bt6—41 to 61 inches; loam
Bt7—61 to 83 inches; loam

Characteristics of Toadtown Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in ravines and on metamorphic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: Ponderosa pine, tanoak, sugar pine, Douglas-fir, incense cedar, white fir, California black oak, whitevein shinleaf, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 35 percent fine, subangular gravel, 0 to 5 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 120 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.1 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A—3 to 5 inches; loam
Bt1—5 to 8 inches; loam
Bt2—8 to 13 inches; clay loam
Bt3—13 to 18 inches; clay
Bt4—18 to 27 inches; clay
Bt5—27 to 51 inches; clay loam
Bt6—51 to 65 inches; loam
Bt7—65 to 75 inches; loam
Crt—75 to 79 inches; loam

Minor Components in Map Unit 813

Dixmine and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in ravines and on metamorphic mountains
Hydric soil status: Not hydric

Mac and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in ravines and on metamorphic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in ravines and on metamorphic mountains
Hydric soil status: Not hydric

814—Mountyana gravelly loam, 2 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 2,355 to 4,395 feet (719 to 1,341 meters)
Mean annual precipitation: 60 to 74 inches (1,524 to 1,880 millimeters)
Mean annual air temperature: 50 to 55 degrees F (10 to 13 degrees C)
Frost-free period: 110 to 210 days

Map Unit Composition

Mountyana gravelly loam—80 percent
Minor components—20 percent

Characteristics of Mountyana Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Parent material: Fine-loamy residuum weathered from volcanic breccia
Observed vegetation: Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak, tanoak, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 30 percent medium, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly loam
Bt2—9 to 13 inches; gravelly clay loam
Bt3—13 to 19 inches; gravelly clay loam
Bt4—19 to 26 inches; gravelly clay loam
Bt5—26 to 37 inches; gravelly clay loam
Bt/Cr—37 to 52 inches; extremely gravelly clay loam
Cr/Bt—52 to 65 inches; extremely gravelly loam
Cr—65 inches; bedrock

Minor Components in Map Unit 814

Schott and similar soils
Composition: 9 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Paradiso and similar soils
Composition: 4 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Redbone and similar soils
Composition: 4 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Lydon and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

815—Mountyana gravelly loam, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 2,155 to 4,235 feet (658 to 1,292 meters)
Mean annual precipitation: 60 to 74 inches (1,524 to 1,880 millimeters)
Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)
Frost-free period: 115 to 210 days

Map Unit Composition

Mountyana gravelly loam—80 percent
Minor components—20 percent

Characteristics of Mountyana Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Fine-loamy residuum weathered from volcanic breccia
Observed vegetation: Ponderosa pine, Douglas-fir, sugar pine, white fir, incense cedar, California black oak, tanoak, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 30 percent medium, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile

Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly loam
Bt2—9 to 13 inches; gravelly clay loam
Bt3—13 to 19 inches; gravelly clay loam
Bt4—19 to 26 inches; gravelly clay loam
Bt5—26 to 37 inches; gravelly clay loam
Bt/Cr—37 to 52 inches; extremely gravelly clay loam
Cr/Bt—52 to 65 inches; extremely gravelly loam
Cr—65 inches; bedrock

Minor Components in Map Unit 815

Schott and similar soils
Composition: 9 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Lydon and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Redbone and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Paradiso and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

817—Lydon very gravelly medial coarse sandy loam, 2 to 15 percent slopes

Map Unit Setting

General location: Northern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 3,375 to 4,700 feet (1,030 to 1,433 meters)
Mean annual precipitation: 70 to 72 inches (1,778 to 1,829 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 110 to 165 days

Map Unit Composition

Lydon very gravelly medial coarse sandy loam—80 percent
Minor components—20 percent

Characteristics of Lydon Very Gravelly Medial Coarse Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Parent material: Sandy and gravelly residuum weathered from volcanic breccia
Observed vegetation: California black oak, ponderosa pine, Douglas-fir, incense cedar, canyon live oak, tanoak, and manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 20 to 50 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 to 1 inch; moderately decomposed plant material
A—1 to 3 inches; very gravelly medial coarse sandy loam
Bw1—3 to 6 inches; very gravelly medial coarse sandy loam
Bw2—6 to 13 inches; extremely gravelly sandy loam
Bw3—13 to 21 inches; extremely gravelly sandy loam
Bw4—21 to 35 inches; extremely cobbly fine sandy loam
R—35 inches; bedrock

Minor Components in Map Unit 817

Schott and similar soils
Composition: 6 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Soils that are less than 20 inches deep to lithic bedrock
Composition: 6 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Redbone and similar soils
Composition: 4 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Mountyana and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

818—Lydon very gravelly medial coarse sandy loam, 15 to 30 percent slopes

Map Unit Setting

General location: Northern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 2,595 to 4,675 feet (792 to 1,426 meters)
Mean annual precipitation: 60 to 72 inches (1,524 to 1,829 millimeters)
Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)
Frost-free period: 125 to 215 days

Map Unit Composition

Lydon very gravelly medial coarse sandy loam—75 percent
Minor components—25 percent

Characteristics of Lydon Very Gravelly Medial Coarse Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Parent material: Sandy and gravelly colluvium and/or residuum weathered from volcanic breccia
Observed vegetation: California black oak, ponderosa pine, Douglas-fir, incense cedar, canyon live oak, tanoak, and manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 20 to 50 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 to 1 inch; moderately decomposed plant material
A—1 to 3 inches; very gravelly medial coarse sandy loam
Bw1—3 to 6 inches; very gravelly medial coarse sandy loam
Bw2—6 to 13 inches; extremely gravelly sandy loam
Bw3—13 to 21 inches; extremely gravelly sandy loam
Bw4—21 to 35 inches; extremely cobbly fine sandy loam
R—35 inches; bedrock

Minor Components in Map Unit 818

Soils that are less than 20 inches deep to lithic bedrock
Composition: 8 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

Redbone and similar soils
Composition: 6 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

Rock outcrop
Composition: 6 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

Schott and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

Mountyana and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: The top and shoulder slopes of volcanic ridges
Hydric soil status: Not hydric

819—Lydon-Rock outcrop complex, 30 to 50 percent slopes

Map Unit Setting

General location: Northern Butte County
Major uses: Wildlife habitat, watershed, and timber production
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 2,040 to 4,795 feet (622 to 1,463 meters)
Mean annual precipitation: 55 to 72 inches (1,397 to 1,829 millimeters)

Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)
Frost-free period: 120 to 230 days

Map Unit Composition

Lydon very gravelly medial coarse sandy loam—65 percent
Rock outcrop (mudflow breccia)—20 percent
Minor components—15 percent

Characteristics of Lydon Very Gravelly Medial Coarse Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Parent material: Sandy and gravelly colluvium derived from volcanic breccia
Observed vegetation: Tanoak, Douglas-fir, California black oak, ponderosa pine, incense cedar, canyon live oak, manzanita, Pacific poison oak, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 20 to 50 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 to 1 inch; moderately decomposed plant material
A—1 to 3 inches; very gravelly medial coarse sandy loam
Bw1—3 to 6 inches; very gravelly medial coarse sandy loam
Bw2—6 to 13 inches; extremely gravelly sandy loam
Bw3—13 to 21 inches; extremely gravelly sandy loam
Bw4—21 to 35 inches; extremely cobbly fine sandy loam
R—35 inches; bedrock

Characteristics of Rock Outcrop (Mudflow Breccia)

Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 819

Soils that are less than 20 inches deep to lithic bedrock
Composition: 8 percent
Slope: 30 to 50 percent

Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Redbone and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Schott and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

Beecee and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes in canyons
Hydric soil status: Not hydric

820—Lydon-Rock outcrop complex, 50 to 70 percent slopes

Map Unit Setting

General location: Northern Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 2,495 to 6,085 feet (761 to 1,856 meters)
Mean annual precipitation: 67 to 72 inches (1,702 to 1,829 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 110 to 185 days

Map Unit Composition

Lydon very gravelly medial coarse sandy loam—60 percent
Rock outcrop (mudflow breccia)—25 percent
Minor components—15 percent

Characteristics of Lydon Very Gravelly Medial Coarse Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Sandy and gravelly colluvium derived from volcanic breccia
Observed vegetation: Douglas-fir, white fir, California black oak, tanoak, canyon live oak, ponderosa pine, incense cedar, manzanita, Pacific poison oak, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 20 to 50 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 to 1 inch; moderately decomposed plant material
A—1 to 3 inches; very gravelly medial coarse sandy loam
Bw1—3 to 6 inches; very gravelly medial coarse sandy loam
Bw2—6 to 13 inches; extremely gravelly sandy loam
Bw3—13 to 21 inches; extremely gravelly sandy loam
Bw4—21 to 35 inches; extremely cobbly fine sandy loam
R—35 inches; bedrock

Characteristics of Rock Outcrop (Mudflow Breccia)

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 820

Soils that are less than 20 inches deep to lithic bedrock
Composition: 10 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Schott and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Redbone and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Beecee and similar soils
Composition: 1 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

821—Lydon-Rock outcrop complex, 70 to 100 percent slopes

Map Unit Setting

General location: Northern Butte County
Major uses: Wildlife habitat and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 2,595 to 3,720 feet (792 to 1,134 meters)
Mean annual precipitation: 68 to 74 inches (1,727 to 1,880 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 140 to 170 days

Map Unit Composition

Lydon very gravelly medial coarse sandy loam—55 percent
Rock outcrop (mudflow breccia)—30 percent
Minor components—15 percent

Characteristics of Lydon Very Gravelly Medial Coarse Sandy Loam

Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Parent material: Sandy and gravelly colluvium derived from volcanic breccia
Observed vegetation: Douglas-fir, white fir, California black oak, tanoak, canyon live oak, ponderosa pine, incense cedar, manzanita, Pacific poison oak, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 20 to 50 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very low (about 0.9 inch)
- *Natural drainage class:* Somewhat excessively drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 8
- *Land capability, nonirrigated:* 8
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 0.5 inch; slightly decomposed plant material
- Oe—0.5 to 1 inch; moderately decomposed plant material
- A—1 to 3 inches; very gravelly medial coarse sandy loam
- Bw1—3 to 6 inches; very gravelly medial coarse sandy loam
- Bw2—6 to 13 inches; extremely gravelly sandy loam

Bw3—13 to 21 inches; extremely gravelly sandy loam
Bw4—21 to 35 inches; extremely cobbly fine sandy loam
R—35 inches; bedrock

Characteristics of Rock Outcrop (Mudflow Breccia)

Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Minor Components in Map Unit 821

Soils that are less than 20 inches deep to lithic bedrock
Composition: 12 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Schott and similar soils
Composition: 1 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Redbone and similar soils
Composition: 1 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Beecee and similar soils
Composition: 1 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

822—Bonepile gravelly medial loam, 2 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 3,595 to 5,360 feet (1,097 to 1,634 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 48 to 52 degrees F (9 to 11 degrees C)
Frost-free period: 100 to 145 days

Map Unit Composition

Bonepile gravelly medial loam—85 percent
Minor components—15 percent

Characteristics of Bonepile Gravelly Medial Loam

Slope: 2 to 15 percent
Geomorphic position: The top and toeslopes of volcanic ridges

Parent material: Loamy tephra over gravelly and loamy residuum weathered from volcanic rocks
Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, greenleaf manzanita, Sierra chinquapin, and whitethorn ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 35 percent medium, subangular gravel, 0 to 35 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; gravelly medial loam
A2—3 to 9 inches; cobbly medial loam
Bw1—9 to 18 inches; gravelly medial loam
Bw2—18 to 30 inches; very gravelly medial loam
2Bw3—30 to 44 inches; very gravelly medial loam
2Cr—44 inches; bedrock

Minor Components in Map Unit 822

Soils that are less than 40 inches deep to paralithic bedrock
Composition: 7 percent
Slope: 2 to 15 percent
Geomorphic position: The top and toeslopes of volcanic ridges
Hydric soil status: Not hydric

Soils that are more than 60 inches deep to bedrock
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: The top and toeslopes of volcanic ridges
Hydric soil status: Not hydric

Lydon and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: The top and toeslopes of volcanic ridges
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 2 to 15 percent

Geomorphic position: The top and toeslopes of volcanic ridges
Hydric soil status: Not hydric

823—Bonepile gravelly medial loam, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 3,320 to 5,655 feet (1,012 to 1,725 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 48 to 52 degrees F (9 to 11 degrees C)
Frost-free period: 100 to 145 days

Map Unit Composition

Bonepile gravelly medial loam—85 percent
Minor components—15 percent

Characteristics of Bonepile Gravelly Medial Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Loamy tephra over gravelly and loamy colluvium and/or residuum weathered from volcanic rocks
Observed vegetation: Ponderosa pine, white fir, sugar pine, Douglas-fir, California black oak, greenleaf manzanita, Sierra chinquapin, and whitethorn ceanothus
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 35 percent medium, subangular gravel, 0 to 35 percent subangular cobbles, 0 to 30 percent subangular stones, 0 to 30 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 3.9 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 4e-1
- *Land capability, nonirrigated:* 4e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 1 inch; slightly decomposed plant material
- A1—1 to 3 inches; gravelly medial loam
- A2—3 to 9 inches; cobbly medial loam
- Bw1—9 to 18 inches; gravelly medial loam
- Bw2—18 to 30 inches; very gravelly medial loam

2Bw3—30 to 44 inches; very gravelly medial loam
2Cr—44 inches; bedrock

Minor Components in Map Unit 823

Soils that are less than 40 inches deep to paralithic bedrock
Composition: 7 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Lydon and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Soils that are more than 60 inches deep to bedrock
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

824—Beecee very gravelly medial loam, 30 to 50 percent slopes

Map Unit Setting

General location: Northeastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 2,315 to 5,655 feet (707 to 1,725 meters)
Mean annual precipitation: 66 to 80 inches (1,676 to 2,032 millimeters)
Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)
Frost-free period: 95 to 200 days

Map Unit Composition

Beecee very gravelly medial loam—85 percent
Minor components—15 percent

Characteristics of Beecee Very Gravelly Medial Loam

Slope: 30 to 50 percent
Geomorphic position: Backslopes on volcanic ridges and in canyons
Parent material: Tephra-influenced, gravelly and loamy colluvium derived from volcanic rocks over gravelly and stony, loamy residuum weathered from volcanic breccia
Observed vegetation: Douglas-fir, white fir, California black oak, incense cedar, ponderosa pine, sugar pine, tanoak, canyon live oak, dogwood, and deerbrush
Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 15 to 40 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 10 percent subrounded boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 to 1 inch; moderately decomposed plant material
A—1 to 4 inches; very gravelly medial loam
Bt1—4 to 8 inches; very gravelly medial loam
Bt2—8 to 15 inches; very gravelly medial loam
Bt3—15 to 22 inches; extremely gravelly medial loam
Bt4—22 to 31 inches; extremely gravelly loam
Bt5—31 to 44 inches; very gravelly loam
2Bt6—44 to 59 inches; very gravelly loam
2Bt7—59 to 68 inches; very gravelly loam
2Bt8—68 to 86 inches; very stony loam

Minor Components in Map Unit 824

Lydon and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on volcanic ridges and in canyons
Hydric soil status: Not hydric

Schott and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on volcanic ridges and in canyons
Hydric soil status: Not hydric

Soils that are less than 20 inches deep to bedrock
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on volcanic ridges and in canyons
Hydric soil status: Not hydric

Extremely bouldery soils
Composition: 2 percent
Slope: 15 to 50 percent
Geomorphic position: Backslopes on volcanic ridges and in canyons
Hydric soil status: Not hydric

825—Beecee-Lydon complex, 50 to 70 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 2,315 to 5,875 feet (707 to 1,792 meters)
Mean annual precipitation: 66 to 80 inches (1,676 to 2,032 millimeters)
Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)
Frost-free period: 95 to 200 days

Map Unit Composition

Beecee very gravelly medial loam—60 percent
Lydon very gravelly medial coarse sandy loam—20 percent
Minor components—20 percent

Characteristics of Beecee Very Gravelly Medial Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Parent material: Tephra-influenced, gravelly and loamy colluvium derived from volcanic rocks over gravelly and stony, loamy residuum weathered from volcanic breccia
Observed vegetation: Douglas-fir, white fir, California black oak, incense cedar, ponderosa pine, sugar pine, tanoak, canyon live oak, dogwood, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 15 to 40 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 10 percent subrounded boulders
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 3.9 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 7e-1
- *Land capability, nonirrigated:* 7e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 0.5 inch; slightly decomposed plant material
- Oe—0.5 to 1 inch; moderately decomposed plant material
- A—1 to 4 inches; very gravelly medial loam
- Bt1—4 to 8 inches; very gravelly medial loam
- Bt2—8 to 15 inches; very gravelly medial loam
- Bt3—15 to 22 inches; extremely gravelly medial loam
- Bt4—22 to 31 inches; extremely gravelly loam
- Bt5—31 to 44 inches; very gravelly loam
- 2Bt6—44 to 59 inches; very gravelly loam

2Bt7—59 to 68 inches; very gravelly loam
2Bt8—68 to 86 inches; very stony loam

Characteristics of Lydon Very Gravelly Medial Coarse Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Parent material: Sandy and gravelly colluvium derived from volcanic breccia
Observed vegetation: Douglas-fir, white fir, California black oak, tanoak, canyon live oak, ponderosa pine, incense cedar, manzanita, Pacific poison oak, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 20 to 50 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
Oe—0.5 to 1 inch; moderately decomposed plant material
A—1 to 3 inches; very gravelly medial coarse sandy loam
Bw1—3 to 6 inches; very gravelly medial coarse sandy loam
Bw2—6 to 13 inches; extremely gravelly sandy loam
Bw3—13 to 21 inches; extremely gravelly sandy loam
Bw4—21 to 35 inches; extremely cobbly fine sandy loam
R—35 inches; bedrock

Minor Components in Map Unit 825

Soils that are less than 20 inches deep to bedrock
Composition: 8 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Schott and similar soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in ravines and in canyons
Hydric soil status: Not hydric

Rock outcrop
Composition: 4 percent
Slope: 50 to 70 percent

Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

Extremely bouldery soils
Composition: 2 percent
Slope: 15 to 70 percent
Geomorphic position: Footslopes in ravines and canyons
Hydric soil status: Not hydric

Rock outcrop
Composition: 1 percent
Slope: 150 to 175 percent
Geomorphic position: Backslopes in ravines and canyons
Hydric soil status: Not hydric

826—Redbone gravelly medial sandy loam, 3 to 15 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 3,795 to 5,200 feet (1,158 to 1,585 meters)
Mean annual precipitation: 70 to 75 inches (1,778 to 1,905 millimeters)
Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Redbone gravelly medial sandy loam—80 percent
Minor components—20 percent

Characteristics of Redbone Gravelly Medial Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Parent material: Loamy tephra over gravelly and loamy residuum weathered from volcanic breccia
Observed vegetation: Ponderosa pine, white fir, Douglas-fir, sugar pine, incense cedar, California black oak, dogwood, common snowberry, Sierra chinquapin, greenleaf manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 35 percent medium, subrounded gravel, 0 to 15 percent subrounded cobbles, 0 to 10 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 4 inches; gravelly medial sandy loam
Bt1—4 to 7 inches; gravelly medial sandy loam
Bt2—7 to 17 inches; gravelly medial fine sandy loam
Bt3—17 to 28 inches; very gravelly fine sandy loam
Bt4—28 to 41 inches; very gravelly coarse sandy loam
Bt5—41 to 54 inches; very gravelly coarse sandy loam
Cr—54 inches; bedrock

Minor Components in Map Unit 826

Soils that are more than 60 inches deep to bedrock
Composition: 6 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Mountyana and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Lydon and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Soils that are less than 40 inches deep to bedrock
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Very bouldery soils
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

827—Redbone gravelly medial sandy loam, 15 to 30 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22B

Landscape: Southern Cascade Mountains
Elevation: 3,795 to 4,995 feet (1,158 to 1,524 meters)
Mean annual precipitation: 70 to 75 inches (1,778 to 1,905 millimeters)
Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 100 to 140 days

Map Unit Composition

Redbone gravelly medial sandy loam—80 percent
Minor components—20 percent

Characteristics of Redbone Gravelly Medial Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Loamy tephra over gravelly and loamy colluvium and/or residuum weathered from volcanic breccia
Observed vegetation: Ponderosa pine, white fir, Douglas-fir, sugar pine, incense cedar, California black oak, dogwood, common snowberry, Sierra chinquapin, greenleaf manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 35 percent medium, subrounded gravel, 0 to 15 percent subrounded cobbles, 0 to 10 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 4 inches; gravelly medial sandy loam
Bt1—4 to 7 inches; gravelly medial sandy loam
Bt2—7 to 17 inches; gravelly medial fine sandy loam
Bt3—17 to 28 inches; very gravelly fine sandy loam
Bt4—28 to 41 inches; very gravelly coarse sandy loam
Bt5—41 to 54 inches; very gravelly coarse sandy loam
Cr—54 inches; bedrock

Minor Components in Map Unit 827

Soils that are less than 40 inches deep to bedrock
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Mountyana and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Lydon and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Soils that are more than 60 inches deep to bedrock
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Very bouldery soils
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

829—Paradiso loam, 2 to 15 percent slopes

Map Unit Setting

General location: North-central Butte county
Major uses: Timber production, homesite and commercial development, wildlife habitat, and watershed
Major land resource area: 22B
Landscape: Southern Cascade Mountains
Elevation: 1,220 to 3,730 feet (372 to 1,137 meters)
Mean annual precipitation: 35 to 73 inches (889 to 1,854 millimeters)
Mean annual air temperature: 54 to 59 degrees F (12 to 15 degrees C)
Frost-free period: 145 to 255 days

Map Unit Composition

Paradiso loam—80 percent
Minor components—20 percent

Characteristics of Paradiso Loam

Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Parent material: Clayey residuum weathered from volcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, California black oak, incense cedar, tanoak, sugar pine, Scotch broom, deerbrush, and whiteleaf manzanita; some white fir at the higher elevations
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent fine, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones, 0 to 5 percent subrounded boulders
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 4 inches; loam
ABt—4 to 9 inches; clay loam
Bt1—9 to 16 inches; clay loam
Bt2—16 to 25 inches; clay loam
Bt3—25 to 45 inches; clay
Bt4—45 to 58 inches; clay loam
Bt5—58 to 74 inches; clay loam
2Bt6—74 to 84 inches; loam

Minor Components in Map Unit 829

Mountyana and similar soils
Composition: 8 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Schott and similar soils
Composition: 7 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Soils that have a water table at a depth of 30 to 80 inches
Composition: 3 percent
Slope: 2 to 8 percent
Geomorphic position: Areas along streams on the top of volcanic ridges
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Areas of post rock basalt flow on the top of volcanic ridges
Hydric soil status: Not hydric

830—Paradiso loam, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte county
Major uses: Timber production, homesite development, wildlife habitat, and watershed
Major land resource area: 22B

Landscape: Southern Cascade Mountains
Elevation: 1,295 to 3,680 feet (396 to 1,122 meters)
Mean annual precipitation: 35 to 73 inches (889 to 1,854 millimeters)
Mean annual air temperature: 54 to 59 degrees F (12 to 15 degrees C)
Frost-free period: 145 to 255 days

Map Unit Composition

Paradiso loam—75 percent
Minor components—25 percent

Characteristics of Paradiso Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Clayey colluvium and/or residuum weathered from volcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, California black oak, incense cedar, tanoak, sugar pine, Scotch broom, deerbrush, and whiteleaf manzanita; some white fir at the higher elevations
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent fine, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones, 0 to 5 percent subrounded boulders
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 4 inches; loam
ABt—4 to 9 inches; clay loam
Bt1—9 to 16 inches; clay loam
Bt2—16 to 25 inches; clay loam
Bt3—25 to 45 inches; clay
Bt4—45 to 58 inches; clay loam
Bt5—58 to 74 inches; clay loam
2Bt6—74 to 84 inches; loam

Minor Components in Map Unit 830

Mountyana and similar soils
Composition: 10 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Schott and similar soils
Composition: 10 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Soils that have a water table at a depth of 30 to 80 inches
Composition: 3 percent
Slope: 2 to 8 percent
Geomorphic position: Areas along streams on volcanic ridges
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

831—Surnuf-Bigridge-Spine complex, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Homesite development, timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,595 to 3,395 feet (792 to 1,036 meters)
Mean annual precipitation: 67 to 70 inches (1,702 to 1,778 millimeters)
Mean annual air temperature: 54 degrees F (12 degrees C)
Frost-free period: 165 to 180 days

Map Unit Composition

Surnuf gravelly loam—40 percent
Bigridge loam—30 percent
Spine very gravelly loam—15 percent
Minor components—15 percent

Characteristics of Surnuf Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metavolcanic mountains
Parent material: Silty and clayey residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, California black oak, incense cedar, sugar pine, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed

Available water capacity: High (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly clay loam
Bt2—9 to 16 inches; gravelly clay loam
Bt3—16 to 27 inches; gravelly clay
Bt4—27 to 29 inches; gravelly clay
Bt5—29 to 56 inches; gravelly silty clay
Bt6—56 to 72 inches; silty clay

Characteristics of Bigridge Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metavolcanic mountains
Parent material: Fine-loamy residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, California black oak, incense cedar, sugar pine, deerbrush, and whiteleaf manzanita
Texture of the surface layer: Moderately decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 5 inches; loam
BAt—5 to 9 inches; gravelly loam
Bt1—9 to 15 inches; gravelly loam
Bt2—15 to 20 inches; gravelly loam
BCt1—20 to 27 inches; very gravelly loam
BCt2—27 to 36 inches; extremely gravelly loam
BCt3—36 to 51 inches; very gravelly loam
Crt—51 to 62 inches; bedrock

Characteristics of Spine Very Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metavolcanic mountains
Parent material: Gravelly and loamy residuum weathered from metavolcanic rocks
Observed vegetation: Whiteleaf manzanita, ponderosa pine, tanoak, Douglas-fir, sugar pine, canyon live oak, incense cedar, and black oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 20 to 60 percent subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly loam
Bt1—3 to 9 inches; extremely gravelly loam
Bt2—9 to 16 inches; extremely gravelly clay loam
R—16 inches; bedrock

Minor Components in Map Unit 831

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metavolcanic mountains
Hydric soil status: Not hydric

Minniecreek and similar soils
Composition: 5 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metavolcanic mountains
Hydric soil status: Not hydric

Ultic Haploxeralfs, loamy-skeletal, and similar soils
Composition: 3 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops and footslopes on metavolcanic mountains
Hydric soil status: Not hydric

Soils that are less than 10 inches deep to bedrock
Composition: 2 percent
Slope: 3 to 15 percent

Geomorphic position: Ridgetops and footslopes on metavolcanic mountains
Hydric soil status: Not hydric

832—Surnuf-Bigridge-Spine complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, wildlife habitat, watershed, and homesite development
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,555 to 3,395 feet (780 to 1,036 meters)
Mean annual precipitation: 65 to 70 inches (1,651 to 1,778 millimeters)
Mean annual air temperature: 54 degrees F (12 degrees C)
Frost-free period: 165 to 180 days

Map Unit Composition

Surnuf gravelly loam—40 percent
Bigridge loam—30 percent
Spine very gravelly loam—15 percent
Minor components—15 percent

Characteristics of Surnuf Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic mountains
Parent material: Silty and clayey colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, California black oak, incense cedar, sugar pine, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly clay loam

Bt2—9 to 16 inches; gravelly clay loam
Bt3—16 to 27 inches; gravelly clay
Bt4—27 to 29 inches; gravelly clay
Bt5—29 to 56 inches; gravelly silty clay
Bt6—56 to 72 inches; silty clay

Characteristics of Bigridge Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, California black oak, incense cedar, sugar pine, deerbrush, and whiteleaf manzanita
Texture of the surface layer: Moderately decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 5 inches; loam
BAt—5 to 9 inches; gravelly loam
Bt1—9 to 15 inches; gravelly loam
Bt2—15 to 20 inches; gravelly loam
BCt1—20 to 27 inches; very gravelly loam
BCt2—27 to 36 inches; extremely gravelly loam
BCt3—36 to 51 inches; very gravelly loam
Crt—51 to 62 inches; bedrock

Characteristics of Spine Very Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic mountains
Parent material: Gravelly and loamy residuum weathered from metavolcanic rocks
Observed vegetation: Whiteleaf manzanita, ponderosa pine, tanoak, Douglas-fir, sugar pine, canyon live oak, incense cedar, and California black oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 20 to 60 percent subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly loam
Bt1—3 to 9 inches; extremely gravelly loam
Bt2—9 to 16 inches; extremely gravelly clay loam
R—16 inches; bedrock

Minor Components in Map Unit 832

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Minniecreek and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Ultic Haploxeralfs, loamy-skeletal, and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Soils that are less than 10 inches deep to bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

833—Surnuf-Bigridge-Spine complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains

Elevation: 2,200 to 3,395 feet (671 to 1,036 meters)
Mean annual precipitation: 60 to 70 inches (1,524 to 1,778 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 165 to 210 days

Map Unit Composition

Surnuf gravelly loam—60 percent
Bigridge loam—15 percent
Spine very gravelly loam—15 percent
Minor components—10 percent

Characteristics of Surnuf Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic mountains
Parent material: Silty and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, California black oak, incense cedar, sugar pine, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 2 percent subangular stones, 0 to 2 percent subangular boulders
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; gravelly clay loam
Bt2—9 to 16 inches; gravelly clay loam
Bt3—16 to 27 inches; gravelly clay
Bt4—27 to 29 inches; gravelly clay
Bt5—29 to 56 inches; gravelly silty clay
Bt6—56 to 72 inches; silty clay

Characteristics of Bigridge Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic mountains
Parent material: Fine-loamy residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, California black oak, incense cedar, sugar pine, deerbrush, and whiteleaf manzanita

Texture of the surface layer: Moderately decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 30 percent coarse, angular gravel, 0 to 5 percent angular cobbles, 0 to 5 percent angular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oe—0 to 1 inch; moderately decomposed plant material
A—1 to 5 inches; loam
BAt—5 to 9 inches; gravelly loam
Bt1—9 to 15 inches; gravelly loam
Bt2—15 to 20 inches; gravelly loam
BCt1—20 to 27 inches; very gravelly loam
BCt2—27 to 36 inches; extremely gravelly loam
BCt3—36 to 51 inches; very gravelly loam
Crt—51 to 62 inches; bedrock

Characteristics of Spine Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic mountains
Parent material: Gravelly and loamy colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Whiteleaf manzanita, ponderosa pine, tanoak, Douglas-fir, sugar pine, canyon live oak, incense cedar, and California black oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 20 to 60 percent subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8

Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly loam
Bt1—3 to 9 inches; extremely gravelly loam
Bt2—9 to 16 inches; extremely gravelly clay loam
R—16 inches; bedrock

Minor Components in Map Unit 833

Ultic Haploxeralfs, fine-loamy, more than 60 inches deep to bedrock, and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Ultic Haploxeralfs, loamy-skeletal, and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Minniecreek and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Soils that are less than 10 inches deep to bedrock
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

834—Hietanen-Mac complex, 3 to 15 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,195 to 3,995 feet (975 to 1,219 meters)
Mean annual precipitation: 65 to 72 inches (1,651 to 1,829 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 160 to 185 days

Map Unit Composition

Hietanen gravelly loam—50 percent
Mac gravelly loam—30 percent
Minor components—20 percent

Characteristics of Hietanen Gravelly Loam

Slope: 3 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains
Parent material: Silty residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, sugar pine, white fir, incense cedar, California black oak, whiteleaf manzanita, dogwood, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 30 percent subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 8 inches; gravelly loam
Bt2—8 to 19 inches; silt loam
Bt3—19 to 30 inches; silt loam
Bt4—30 to 53 inches; silt loam
Cr—53 inches; bedrock

Characteristics of Mac Gravelly Loam

Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metasedimentary mountains
Parent material: Silty residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, sugar pine, white fir, incense cedar, California black oak, whiteleaf manzanita, dogwood, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 50 percent subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1

Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; very gravelly loam
Bt2—9 to 15 inches; gravelly silty clay loam
Bt3—15 to 23 inches; silty clay loam
Crt—23 to 37 inches; extremely gravelly silt loam
Cr—37 inches; bedrock

Minor Components in Map Unit 834

Jocal and similar soils
Composition: 8 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metasedimentary mountains
Hydric soil status: Not hydric

Sites and similar soils
Composition: 4 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metasedimentary mountains
Hydric soil status: Not hydric

Dixmine and similar soils
Composition: 4 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metasedimentary mountains
Hydric soil status: Not hydric

Spine and similar soils
Composition: 4 percent
Slope: 3 to 15 percent
Geomorphic position: Ridgetops on metasedimentary mountains
Hydric soil status: Not hydric

835—Hietanen-Mac complex, 15 to 30 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,795 to 3,995 feet (853 to 1,219 meters)
Mean annual precipitation: 65 to 72 inches (1,651 to 1,829 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 160 to 185 days

Map Unit Composition

Hietanen gravelly loam—60 percent
Mac gravelly loam—20 percent
Minor components—20 percent

Characteristics of Hietanen Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on metasedimentary mountains
Parent material: Silty colluvium and/or residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, sugar pine, white fir, incense cedar, California black oak, whiteleaf manzanita, dogwood, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 30 percent subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 8 inches; gravelly loam
Bt2—8 to 19 inches; silt loam
Bt3—19 to 30 inches; silt loam
Bt4—30 to 53 inches; silt loam
Cr—53 inches; bedrock

Characteristics of Mac Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on metasedimentary mountains
Parent material: Silty residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, tanoak, sugar pine, white fir, incense cedar, California black oak, whiteleaf manzanita, dogwood, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 50 percent gravel, 0 to 10 percent cobbles, 0 to 5 percent stones
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; very gravelly loam
Bt2—9 to 15 inches; gravelly silty clay loam
Bt3—15 to 23 inches; silty clay loam
Crt—23 to 37 inches; extremely gravelly silt loam
Cr—37 inches; bedrock

Minor Components in Map Unit 835

Jocal and similar soils
Composition: 8 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on metasedimentary mountains
Hydric soil status: Not hydric

Sites and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on metasedimentary mountains
Hydric soil status: Not hydric

Dixmine and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on metasedimentary mountains
Hydric soil status: Not hydric

Spine and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Ridgetops and shoulder slopes on metasedimentary mountains
Hydric soil status: Not hydric

836—Hietanen-Mac-Spine complex, 30 to 50 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,195 to 3,995 feet (975 to 1,219 meters)
Mean annual precipitation: 64 to 72 inches (1,626 to 1,829 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 160 to 185 days

Map Unit Composition

Hietanen gravelly loam—50 percent

Mac gravelly loam—20 percent
Spine very gravelly loam—15 percent
Minor components—15 percent

Characteristics of Hietanen Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Parent material: Silty colluvium and/or residuum weathered from metasedimentary rocks
Observed vegetation: Tanoak, Douglas-fir, sugar pine, white fir, ponderosa pine, California black oak, incense cedar, dogwood, whiteleaf manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 30 percent subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 8 inches; gravelly loam
Bt2—8 to 19 inches; silt loam
Bt3—19 to 30 inches; silt loam
Bt4—30 to 53 inches; silt loam
Cr—53 inches; bedrock

Characteristics of Mac Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Parent material: Silty colluvium and/or residuum weathered from metasedimentary rocks
Observed vegetation: Tanoak, Douglas-fir, sugar pine, white fir, ponderosa pine, California black oak, incense cedar, dogwood, whiteleaf manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 50 percent gravel, 0 to 10 percent cobbles, 0 to 5 percent stones
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; very gravelly loam
Bt2—9 to 15 inches; gravelly silty clay loam
Bt3—15 to 23 inches; silty clay loam
Crt—23 to 37 inches; extremely gravelly silt loam
Cr—37 inches; bedrock

Characteristics of Spine Very Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Nose slopes on metasedimentary mountains
Parent material: Gravelly residuum weathered from metasedimentary rocks
Observed vegetation: Tanoak, Douglas-fir, sugar pine, white fir, ponderosa pine, California black oak, incense cedar, dogwood, whiteleaf manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 20 to 60 percent subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly loam
Bt1—3 to 9 inches; extremely gravelly loam
Bt2—9 to 16 inches; extremely gravelly clay loam
R—16 inches; bedrock

Minor Components in Map Unit 836

Jocal and similar soils
Composition: 8 percent

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 80 inches deep to bedrock
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Sites and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

837—Hietanen-Spine-Mac complex, 50 to 70 percent slopes

Map Unit Setting

General location: North-central and southeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,995 to 3,720 feet (609 to 1,134 meters)
Mean annual precipitation: 64 to 72 inches (1,626 to 1,829 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 160 to 185 days

Map Unit Composition

Hietanen gravelly loam—35 percent
Spine very gravelly loam—25 percent
Mac gravelly loam—20 percent
Minor components—20 percent

Characteristics of Hietanen Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on metasedimentary mountains
Parent material: Silty colluvium and/or residuum weathered from metasedimentary rocks
Observed vegetation: Tanoak, Douglas-fir, sugar pine, white fir, ponderosa pine, California black oak, incense cedar, Pacific madrone, dogwood, whiteleaf manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 30 percent subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.2 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
Bt1—3 to 8 inches; gravelly loam
Bt2—8 to 19 inches; silt loam
Bt3—19 to 30 inches; silt loam
Bt4—30 to 53 inches; silt loam
Cr—53 inches; bedrock

Characteristics of Spine Very Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Nose slopes on metasedimentary mountains
Parent material: Silty colluvium and/or residuum weathered from metasedimentary rocks
Observed vegetation: Tanoak, Douglas-fir, sugar pine, white fir, ponderosa pine, California black oak, incense cedar, dogwood, whiteleaf manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 20 to 60 percent subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly loam
Bt1—3 to 9 inches; extremely gravelly loam
Bt2—9 to 16 inches; extremely gravelly clay loam
R—16 inches; bedrock

Characteristics of Mac Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on metasedimentary mountains

Parent material: Silty colluvium and/or residuum weathered from metasedimentary rocks
Observed vegetation: Tanoak, Douglas-fir, sugar pine, white fir, ponderosa pine, California black oak, incense cedar, dogwood, whiteleaf manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 50 percent gravel, 0 to 10 percent cobbles, 0 to 5 percent stones
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; very gravelly loam
Bt2—9 to 15 inches; gravelly silty clay loam
Bt3—15 to 23 inches; silty clay loam
Crt—23 to 37 inches; extremely gravelly silt loam
Cr—37 inches; bedrock

Minor Components in Map Unit 837

Jocal and similar soils
Composition: 8 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 80 inches deep to bedrock
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Sites and similar soils
Composition: 4 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Haploxerults, coarse-loamy, more than 60 inches deep to bedrock, and similar soils
Composition: 3 percent
Slope: 50 to 70 percent

Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

838—Dixmine-Spine-Mac complex, 50 to 70 percent slopes

Map Unit Setting

General location: North-central Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 1,600 to 3,595 feet (488 to 1,097 meters)
Mean annual precipitation: 64 to 73 inches (1,626 to 1,854 millimeters)
Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)
Frost-free period: 140 to 200 days

Map Unit Composition

Dixmine very gravelly loam—35 percent
Spine very gravelly loam—25 percent
Mac gravelly loam—25 percent
Minor components—15 percent

Characteristics of Dixmine Very Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Gravelly, loamy and clayey residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Douglas-fir, tanoak, California black oak, canyon live oak, ponderosa pine, sugar pine, bigleaf maple, incense cedar, manzanita, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 25 percent medium, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 10 percent subangular stones
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.2 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material

A—2 to 6 inches; very gravelly loam
Bt1—6 to 11 inches; very gravelly loam
Bt2—11 to 17 inches; gravelly loam
Bt3—17 to 30 inches; very cobbly clay loam
Bt4—30 to 41 inches; very gravelly clay loam
Bt5—41 to 54 inches; extremely cobbly clay loam
Cr—54 inches; bedrock

Characteristics of Spine Very Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Nose slopes in canyons
Parent material: Gravelly colluvium and/or residuum weathered from metavolcanic rocks
Observed vegetation: Douglas-fir, tanoak, California black oak, canyon live oak, ponderosa pine, sugar pine, bigleaf maple, incense cedar, manzanita, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 20 to 60 percent medium, subangular gravel, 0 to 20 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.9 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-8
Land capability, nonirrigated: 7e-8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; very gravelly loam
Bt1—3 to 9 inches; extremely gravelly loam
Bt2—9 to 16 inches; extremely gravelly clay loam
R—16 inches; bedrock

Characteristics of Mac Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Parent material: Fine-loamy residuum and/or colluvium derived from metavolcanic rocks
Observed vegetation: Douglas-fir, tanoak, California black oak, canyon live oak, ponderosa pine, sugar pine, bigleaf maple, incense cedar, manzanita, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 50 percent medium gravel, 0 to 10 percent cobbles, 0 to 5 percent stones

Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 9 inches; very gravelly loam
Bt2—9 to 15 inches; gravelly silty clay loam
Bt3—15 to 23 inches; silty clay loam
Crt—23 to 37 inches; extremely gravelly silt loam
Cr—37 inches; bedrock

Minor Components in Map Unit 838

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Rock outcrop
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Nose slopes in canyons
Hydric soil status: Not hydric

Haploxerults, loamy-skeletal, more than 60 inches deep to bedrock, and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Soils that are 2 to 10 inches deep to bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Nose slopes in canyons
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Beecee and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Toadtown and similar soils
Composition: 1 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes in canyons
Hydric soil status: Not hydric

Hydraulic mining debris
Composition: 1 percent
Slope: 2 to 30 percent
Geomorphic position: The bottom of canyons
Hydric soil status: Not hydric

839—Chawanakee-Billscabin complex, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,795 to 4,595 feet (1,158 to 1,402 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 150 days

Map Unit Composition

Chawanakee gravelly sandy loam—55 percent
Billscabin gravelly sandy loam—35 percent
Minor components—10 percent

Characteristics of Chawanakee Gravelly Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Parent material: Coarse-loamy residuum weathered from quartz diorite
Observed vegetation: White fir, Douglas-fir, sugar pine, ponderosa pine, incense cedar, whitethorn ceanothus, dogwood, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel, 0 to 5 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)

Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: C

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 to 2 inches; moderately decomposed plant material
A—2 to 5 inches; gravelly sandy loam
Bw1—5 to 11 inches; gravelly sandy loam
Bw2—11 to 19 inches; gravelly sandy loam
Cr—19 inches; bedrock

Characteristics of Billscabin Gravelly Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Parent material: Gravelly, coarse-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: White fir, Douglas-fir, sugar pine, ponderosa pine, incense cedar, whitethorn ceanothus, dogwood, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 65 percent coarse, angular gravel, 0 to 50 percent angular cobbles, 0 to 50 percent angular stones, 0 to 10 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 82 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.3 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 5 inches; gravelly sandy loam
A2—5 to 14 inches; very gravelly sandy loam
Bw—14 to 27 inches; very gravelly sandy loam
C1—27 to 37 inches; very gravelly loamy sand
C2—37 to 57 inches; very gravelly loamy sand
C3—57 to 82 inches; very gravelly loamy sand

Minor Components in Map Unit 839

Rock outcrop
Composition: 5 percent

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are 10 to 20 inches deep to lithic bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

841—Billscabin-Bonneyridge complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,100 to 4,595 feet (945 to 1,402 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 150 days

Map Unit Composition

Billscabin gravelly sandy loam—50 percent
Bonneyridge sandy loam—35 percent
Minor components—15 percent

Characteristics of Billscabin Gravelly Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Gravelly, coarse-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: White fir, Douglas-fir, sugar pine, ponderosa pine, incense cedar, whitethorn ceanothus, dogwood, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 65 percent coarse, angular gravel, 0 to 50 percent angular cobbles, 0 to 50 percent angular stones, 0 to 10 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 82 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.3 inches)

Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 5 inches; gravelly sandy loam
A2—5 to 14 inches; very gravelly sandy loam
Bw—14 to 27 inches; very gravelly sandy loam
C1—27 to 37 inches; very gravelly loamy sand
C2—37 to 57 inches; very gravelly loamy sand
C3—57 to 82 inches; very gravelly loamy sand

Characteristics of Bonneyridge Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy residuum and/or colluvium derived from quartz diorite
Observed vegetation: White fir, Douglas-fir, sugar pine, ponderosa pine, incense cedar, whitethorn ceanothus, dogwood, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; sandy loam
A2—3 to 6 inches; sandy loam
Bw1—6 to 16 inches; coarse sandy loam
Bw2—16 to 22 inches; coarse sandy loam
Bw3—22 to 31 inches; coarse sandy loam
Bw4—31 to 39 inches; sandy loam
C1—39 to 56 inches; loamy coarse sand
C2—56 to 76 inches; gravelly loamy coarse sand

Minor Components in Map Unit 841

Lewisflat and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Chawanakee and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Nose slopes on granitic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are 40 to 60 inches deep to bedrock
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

842—Billscabin-Bonneyridge complex, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,100 to 4,595 feet (945 to 1,402 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 150 days

Map Unit Composition

Billscabin gravelly sandy loam—60 percent
Bonneyridge sandy loam—25 percent
Minor components—15 percent

Characteristics of Billscabin Gravelly Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Gravelly, coarse-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: White fir, Douglas-fir, sugar pine, ponderosa pine, incense cedar, whitethorn ceanothus, dogwood, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 65 percent coarse, angular gravel, 0 to 50 percent angular cobbles, 0 to 50 percent angular stones, 0 to 10 percent angular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 82 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.3 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 5 inches; gravelly sandy loam
A2—5 to 14 inches; very gravelly sandy loam
Bw—14 to 27 inches; very gravelly sandy loam
C1—27 to 37 inches; very gravelly loamy sand
C2—37 to 57 inches; very gravelly loamy sand
C3—57 to 82 inches; very gravelly loamy sand

Characteristics of Bonneyridge Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy residuum and/or colluvium derived from quartz diorite
Observed vegetation: White fir, Douglas-fir, sugar pine, ponderosa pine, incense cedar, whitethorn ceanothus, dogwood, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)

Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; sandy loam
A2—3 to 6 inches; sandy loam
Bw1—6 to 16 inches; coarse sandy loam
Bw2—16 to 22 inches; coarse sandy loam
Bw3—22 to 31 inches; coarse sandy loam
Bw4—31 to 39 inches; sandy loam
C1—39 to 56 inches; loamy coarse sand
C2—56 to 76 inches; gravelly loamy coarse sand

Minor Components in Map Unit 842

Rock outcrop
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Chawanakee and similar soils
Composition: 4 percent
Slope: 50 to 70 percent
Geomorphic position: Nose slopes on granitic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Lewisflat and similar soils
Composition: 1 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are 40 to 60 inches deep to bedrock
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

846—Bonneyridge-Lewisflat complex, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,300 to 4,595 feet (1,006 to 1,402 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 150 days

Map Unit Composition

Bonneyridge sandy loam—60 percent
Lewisflat loam—20 percent
Minor components—20 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on granitic mountains
Parent material: Coarse-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: Ponderosa pine, sugar pine, white fir, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, and manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Low (about 4.9 inches)
- *Natural drainage class:* Somewhat excessively drained
- *Surface runoff (bare conditions):* Low

Interpretive groups
- *Land capability, irrigated:* 4e-1
- *Land capability, nonirrigated:* 4e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* A

Typical profile
- Oi—0 to 1 inch; slightly decomposed plant material
- A1—1 to 3 inches; sandy loam
- A2—3 to 6 inches; sandy loam
- Bw1—6 to 16 inches; coarse sandy loam
- Bw2—16 to 22 inches; coarse sandy loam
- Bw3—22 to 31 inches; coarse sandy loam
- Bw4—31 to 39 inches; sandy loam

C1—39 to 56 inches; loamy coarse sand
C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Lewisflat Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on granitic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: Ponderosa pine, sugar pine, white fir, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, and manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 3 inches; slightly decomposed plant material
A1—3 to 5 inches; loam
A2—5 to 9 inches; loam
Bt1—9 to 18 inches; loam
2Bt2—18 to 33 inches; loam
2Bt3—33 to 49 inches; loam
2BCt1—49 to 65 inches; loam
2BCt2—65 to 75 inches; loam

Minor Components in Map Unit 846

Chawanakee and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on granitic mountains
Hydric soil status: Not hydric

Haplohumults, 27 to 35 percent clay in the subsoil, and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on granitic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on granitic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on granitic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and footslopes on granitic mountains
Hydric soil status: Not hydric

847—Bonneyridge-Lewisflat complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,300 to 4,595 feet (1,006 to 1,402 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 150 days

Map Unit Composition

Bonneyridge sandy loam—60 percent
Lewisflat loam—20 percent
Minor components—20 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: Ponderosa pine, sugar pine, white fir, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, and manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1

Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; sandy loam
A2—3 to 6 inches; sandy loam
Bw1—6 to 16 inches; coarse sandy loam
Bw2—16 to 22 inches; coarse sandy loam
Bw3—22 to 31 inches; coarse sandy loam
Bw4—31 to 39 inches; sandy loam
C1—39 to 56 inches; loamy coarse sand
C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Lewisflat Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: Ponderosa pine, sugar pine, white fir, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, and manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 3 inches; slightly decomposed plant material
A1—3 to 5 inches; loam
A2—5 to 9 inches; loam
Bt1—9 to 18 inches; loam
2Bt2—18 to 33 inches; loam
2Bt3—33 to 49 inches; loam
2BCt1—49 to 65 inches; loam
2BCt2—65 to 75 inches; loam

Minor Components in Map Unit 847

Chawanakee and similar soils
Composition: 5 percent
Slope: 15 to 30 percent

Geomorphic position: Nose slopes on granitic mountains
Hydric soil status: Not hydric

Haplohumults, 27 to 35 percent clay in the subsoil, and similar soils
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are less than 40 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Eroded soils from which the O horizon and the upper part of the A horizon have been removed
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

848—Bonneyridge-Lewisflat complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,300 to 4,595 feet (1,006 to 1,402 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 150 days

Map Unit Composition

Bonneyridge sandy loam—60 percent

Lewisflat loam—20 percent
Minor components—20 percent

Characteristics of Bonneyridge Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Coarse-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: Ponderosa pine, sugar pine, white fir, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, and manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.9 inches)
Natural drainage class: Somewhat excessively drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: A

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; sandy loam
A2—3 to 6 inches; sandy loam
Bw1—6 to 16 inches; coarse sandy loam
Bw2—16 to 22 inches; coarse sandy loam
Bw3—22 to 31 inches; coarse sandy loam
Bw4—31 to 39 inches; sandy loam
C1—39 to 56 inches; loamy coarse sand
C2—56 to 76 inches; gravelly loamy coarse sand

Characteristics of Lewisflat Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: Ponderosa pine, sugar pine, white fir, incense cedar, Douglas-fir, California black oak, tanoak, whitethorn ceanothus, and manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 3 inches; slightly decomposed plant material
A1—3 to 5 inches; loam
A2—5 to 9 inches; loam
Bt1—9 to 18 inches; loam
2Bt2—18 to 33 inches; loam
2Bt3—33 to 49 inches; loam
2BCt1—49 to 65 inches; loam
2BCt2—65 to 75 inches; loam

Minor Components in Map Unit 848

Chawanakee and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Haplohumults, 27 to 35 percent clay in the subsoil, and similar soils
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Rock outcrop
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Coarse-loamy soils that are less than 40 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Eroded soils from which the O horizon and the upper part of the A horizon have been removed
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

850—Lewisflat loam, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,300 to 4,595 feet (1,006 to 1,402 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 150 days

Map Unit Composition

Lewisflat loam—85 percent
Minor components—15 percent

Characteristics of Lewisflat Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Parent material: Fine-loamy residuum weathered from quartz diorite
Observed vegetation: Douglas-fir, white fir, sugar pine, ponderosa pine, incense cedar, California black oak, tanoak, Pacific madrone, whiteleaf manzanita, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 3 inches; slightly decomposed plant material
A1—3 to 5 inches; loam
A2—5 to 9 inches; loam
Bt1—9 to 18 inches; loam
2Bt2—18 to 33 inches; loam

2Bt3—33 to 49 inches; loam
2BCt1—49 to 65 inches; loam
2BCt2—65 to 75 inches; loam

Minor Components in Map Unit 850

Bonneyridge sandy loam and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Chawanakee and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Soils that have more than 27 percent clay in the subsoil
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Soils that have more than 35 percent rock fragments
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to lithic bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

Haplohumults, 27 to 35 percent clay, and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on granitic mountains
Hydric soil status: Not hydric

851—Lewisflat loam, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,300 to 4,595 feet (1,006 to 1,402 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 150 days

Map Unit Composition

Lewisflat loam—80 percent
Minor components—20 percent

Characteristics of Lewisflat Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: Douglas-fir, white fir, sugar pine, ponderosa pine, incense cedar, California black oak, tanoak, Pacific madrone, whiteleaf manzanita, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* High (about 8.7 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 4e-1
- *Land capability, nonirrigated:* 4e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 3 inches; slightly decomposed plant material
- A1—3 to 5 inches; loam
- A2—5 to 9 inches; loam
- Bt1—9 to 18 inches; loam
- 2Bt2—18 to 33 inches; loam
- 2Bt3—33 to 49 inches; loam
- 2BCt1—49 to 65 inches; loam
- 2BCt2—65 to 75 inches; loam

Minor Components in Map Unit 851

Bonneyridge sandy loam and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Chawanakee and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that have more than 27 percent clay in the subsoil
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to lithic bedrock
Composition: 3 percent

Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that have more than 35 percent rock fragments
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Haplohumults, 27 to 35 percent clay, and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

852—Lewisflat loam, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,300 to 4,595 feet (1,006 to 1,402 meters)
Mean annual precipitation: 70 to 80 inches (1,778 to 2,032 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 150 days

Map Unit Composition

Lewisflat loam—75 percent
Minor components—25 percent

Characteristics of Lewisflat Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from quartz diorite
Observed vegetation: Douglas-fir, white fir, sugar pine, ponderosa pine, incense cedar, California black oak, tanoak, Pacific madrone, whiteleaf manzanita, and dogwood
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 60 to 130 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.7 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1

Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 3 inches; slightly decomposed plant material
A1—3 to 5 inches; loam
A2—5 to 9 inches; loam
Bt1—9 to 18 inches; loam
2Bt2—18 to 33 inches; loam
2Bt3—33 to 49 inches; loam
2BCt1—49 to 65 inches; loam
2BCt2—65 to 75 inches; loam

Minor Components in Map Unit 852

Rock outcrop
Composition: 9 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Chawanakee and similar soils
Composition: 6 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that have more than 35 percent rock fragments
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Bonneyridge sandy loam and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to lithic bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

Haplohumults, 27 to 35 percent clay, and similar soils
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on granitic mountains
Hydric soil status: Not hydric

860—Toadtown-Powellton complex, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, watershed, and wildlife habitat

Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,995 to 4,370 feet (914 to 1,333 meters)
Mean annual precipitation: 60 to 75 inches (1,524 to 1,905 millimeters)
Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)
Frost-free period: 140 to 180 days

Map Unit Composition

Toadtown gravelly loam—60 percent
Powellton silt loam—20 percent
Minor components—20 percent

Characteristics of Toadtown Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains
Parent material: Clayey residuum weathered from igneous and metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 2 percent subangular cobbles
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* High (about 9.5 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 3e-1
- *Land capability, nonirrigated:* 3e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 1 inch; slightly decomposed plant material
- A—1 to 6 inches; gravelly loam
- Bt1—6 to 15 inches; silty clay loam
- Bt2—15 to 32 inches; silty clay
- Bt3—32 to 43 inches; silty clay
- Bt4—43 to 55 inches; cobbly silty clay loam
- Bt5—55 to 80 inches; silty clay loam

Characteristics of Powellton Silt Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains
Parent material: Fine-loamy residuum weathered from igneous and metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent cobbles, 0 to 15 percent gravel

Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; silt loam
A2—3 to 9 inches; silt loam
Bt1—9 to 19 inches; silty clay loam
Bt2—19 to 28 inches; silty clay loam
Bt3—28 to 33 inches; silty clay loam
Bt4—33 to 48 inches; silt loam
Bt5—48 to 66 inches; silt loam
BC—66 to 73 inches; loam
C1—73 to 83 inches; loam
C2—83 to 109 inches; loam

Minor Components in Map Unit 860

Palexerults, mesic, and similar soils
Composition: 7 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Rogerville and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Hydric soil status: Not hydric

Sites taxadjunct and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metasedimentary mountains
Hydric soil status: Not hydric

Fine textured soils that are 40 to 60 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 2 to 15 percent

Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Typic Haploxerults and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Soils that have a mechanically altered surface layer
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

861—Toadtown-Powellton complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, watershed, and wildlife habitat
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,480 to 4,370 feet (756 to 1,333 meters)
Mean annual precipitation: 60 to 75 inches (1,524 to 1,905 millimeters)
Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)
Frost-free period: 140 to 180 days

Map Unit Composition

Toadtown gravelly loam—60 percent
Powellton silt loam—20 percent
Minor components—20 percent

Characteristics of Toadtown Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Parent material: Clayey residuum and/or colluvium derived from igneous and metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 2 percent subangular cobbles
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: High (about 9.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 6 inches; gravelly loam
Bt1—6 to 15 inches; silty clay loam
Bt2—15 to 32 inches; silty clay
Bt3—32 to 43 inches; silty clay
Bt4—43 to 55 inches; cobbly silty clay loam
Bt5—55 to 80 inches; silty clay loam

Characteristics of Powellton Silt Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Parent material: Fine-loamy residuum and/or colluvium derived from igneous and metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent cobbles, 0 to 15 percent gravel
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; silt loam
A2—3 to 9 inches; silt loam
Bt1—9 to 19 inches; silty clay loam
Bt2—19 to 28 inches; silty clay loam
Bt3—28 to 33 inches; silty clay loam

Bt4—33 to 48 inches; silt loam
Bt5—48 to 66 inches; silt loam
BC—66 to 73 inches; loam
C1—73 to 83 inches; loam
C2—83 to 109 inches; loam

Minor Components in Map Unit 861

Palexerults, mesic, and similar soils
Composition: 7 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Rogerville and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Sites taxadjunct and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Fine textured soils that are 40 to 60 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Typic Haploxerults and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Soils that are fine-loamy in the upper part and clayey-skeletal in the lower part
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Soils that have a mechanically altered surface layer
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

862—Toadtown-Powellton complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, watershed, and wildlife habitat
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,575 to 4,370 feet (785 to 1,333 meters)
Mean annual precipitation: 60 to 75 inches (1,524 to 1,905 millimeters)
Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)
Frost-free period: 140 to 180 days

Map Unit Composition

Toadtown gravelly loam—60 percent
Powellton silt loam—20 percent
Minor components—20 percent

Characteristics of Toadtown Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Parent material: Clayey residuum and/or colluvium derived from igneous and metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 2 percent subangular cobbles
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* High (about 9.5 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 6e-1
- *Land capability, nonirrigated:* 6e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 1 inch; slightly decomposed plant material
- A—1 to 6 inches; gravelly loam
- Bt1—6 to 15 inches; silty clay loam
- Bt2—15 to 32 inches; silty clay
- Bt3—32 to 43 inches; silty clay
- Bt4—43 to 55 inches; cobbly silty clay loam
- Bt5—55 to 80 inches; silty clay loam

Characteristics of Powellton Silt Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Parent material: Fine-loamy residuum and/or colluvium derived from igneous and metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent cobbles, 0 to 15 percent gravel
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; silt loam
A2—3 to 9 inches; silt loam
Bt1—9 to 19 inches; silty clay loam
Bt2—19 to 28 inches; silty clay loam
Bt3—28 to 33 inches; silty clay loam
Bt4—33 to 48 inches; silt loam
Bt5—48 to 66 inches; silt loam
BC—66 to 73 inches; loam
C1—73 to 83 inches; loam
C2—83 to 109 inches; loam

Minor Components in Map Unit 862

Palexerults, mesic, and similar soils
Composition: 7 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Rogerville and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Sites taxadjunct and similar soils
Composition: 4 percent
Slope: 30 to 50 percent

Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Soils that have a mechanically altered surface layer
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

863—Toadtown-Powellton complex, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, watershed, and wildlife habitat
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,480 to 3,995 feet (756 to 1,219 meters)
Mean annual precipitation: 60 to 75 inches (1,524 to 1,905 millimeters)
Mean annual air temperature: 52 to 55 degrees F (11 to 13 degrees C)
Frost-free period: 140 to 180 days

Map Unit Composition

Toadtown gravelly loam—60 percent
Powellton silt loam—20 percent
Minor components—20 percent

Characteristics of Toadtown Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Parent material: Clayey residuum and/or colluvium derived from igneous and metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 2 percent subangular cobbles
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: High (about 9.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 6 inches; gravelly loam
Bt1—6 to 15 inches; silty clay loam
Bt2—15 to 32 inches; silty clay
Bt3—32 to 43 inches; silty clay
Bt4—43 to 55 inches; cobbly silty clay loam
Bt5—55 to 80 inches; silty clay loam

Characteristics of Powellton Silt Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Parent material: Fine-loamy residuum and/or colluvium derived from igneous and metamorphic rocks
Observed vegetation: Douglas-fir, ponderosa pine, sugar pine, white fir, tanoak, incense cedar, California black oak, Pacific madrone, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent cobbles, 0 to 15 percent gravel
Restrictive feature: None identified
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very high (about 10.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 to 3 inches; silt loam
A2—3 to 9 inches; silt loam
Bt1—9 to 19 inches; silty clay loam
Bt2—19 to 28 inches; silty clay loam
Bt3—28 to 33 inches; silty clay loam
Bt4—33 to 48 inches; silt loam
Bt5—48 to 66 inches; silt loam
BC—66 to 73 inches; loam

C1—73 to 83 inches; loam
C2—83 to 109 inches; loam

Minor Components in Map Unit 863

Palexerults, mesic, and similar soils
Composition: 7 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Rogerville and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Sites taxadjunct and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Fine textured soils that are 40 to 60 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Typic Haploxerults and similar soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Soils that are loamy-skeletal in the upper part and fine textured in the lower part
Composition: 1 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

880—Sites-Jocal taxadjuncts, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, watershed, and wildlife habitat

Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,870 to 4,320 feet (876 to 1,318 meters)
Mean annual precipitation: 60 to 80 inches (1,524 to 2,030 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 130 to 180 days

Map Unit Composition

Sites taxadjunct gravelly loam—50 percent
Jocal taxadjunct gravelly loam—35 percent
Minor components—15 percent

Characteristics of Sites Taxadjunct Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metasedimentary mountains
Parent material: Silty and clayey residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 7.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
BA—3 to 10 inches; very gravelly loam
Bt1—10 to 21 inches; gravelly silty clay
Bt2—21 to 34 inches; gravelly silty clay
Bt3—34 to 59 inches; silty clay
Bt4—59 to 72 inches; silty clay

Characteristics of Jocal Taxadjunct Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metasedimentary mountains
Parent material: Fine-loamy residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material

Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 3 inches; slightly decomposed plant material
A—3 to 4 inches; gravelly loam
Bw—4 to 9 inches; gravelly loam
Bt1—9 to 19 inches; gravelly loam
Bt2—19 to 33 inches; gravelly loam
Bt3—33 to 46 inches; very gravelly clay loam
BCt—46 to 52 inches; extremely gravelly clay loam
Cr—52 to 68 inches; bedrock

Minor Components in Map Unit 880

Rogerville and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Hydric soil status: Not hydric

Palexerults, mesic, and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metasedimentary mountains
Hydric soil status: Not hydric

Toadtown and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Mac gravelly loam and similar soils
Composition: 2 percent
Slope: 2 to 15 percent

Geomorphic position: Ridgetops on metasedimentary mountains
Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metasedimentary mountains
Hydric soil status: Not hydric

Fine textured soils that are 20 to 60 inches deep to paralithic bedrock
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metasedimentary mountains
Hydric soil status: Not hydric

881—Sites-Jocal taxadjuncts, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, watershed, and wildlife habitat
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,595 to 4,195 feet (792 to 1,280 meters)
Mean annual precipitation: 60 to 80 inches (1,524 to 2,030 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 130 to 180 days

Map Unit Composition

Sites taxadjunct gravelly loam—50 percent
Jocal taxadjunct gravelly loam—35 percent
Minor components—15 percent

Characteristics of Sites Taxadjunct Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metasedimentary mountains
Parent material: Silty and clayey colluvium and/or residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 7.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
BA—3 to 10 inches; very gravelly loam
Bt1—10 to 21 inches; gravelly silty clay
Bt2—21 to 34 inches; gravelly silty clay
Bt3—34 to 59 inches; silty clay
Bt4—59 to 72 inches; silty clay

Characteristics of Jocal Taxadjunct Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metasedimentary mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 3 inches; slightly decomposed plant material
A—3 to 4 inches; gravelly loam
Bw—4 to 9 inches; gravelly loam
Bt1—9 to 19 inches; gravelly loam
Bt2—19 to 33 inches; gravelly loam
Bt3—33 to 46 inches; very gravelly clay loam
BCt—46 to 52 inches; extremely gravelly clay loam
Cr—52 to 68 inches; bedrock

Minor Components in Map Unit 881

Rogerville and similar soils
Composition: 3 percent

Slope: 15 to 30 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Toadtown and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Mac gravelly loam and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Palexerults, mesic, and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Fine textured soils that are 20 to 60 inches deep to paralithic bedrock
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to bedrock
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

882—Sites-Jocal taxadjuncts, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, watershed, and wildlife habitat
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,595 to 3,995 feet (792 to 1,219 meters)
Mean annual precipitation: 60 to 80 inches (1,524 to 2,030 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 130 to 180 days

Map Unit Composition

Sites taxadjunct gravelly loam—50 percent
Jocal taxadjunct gravelly loam—35 percent
Minor components—15 percent

Characteristics of Sites Taxadjunct Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Parent material: Silty and clayey colluvium and/or residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 7.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
BA—3 to 10 inches; very gravelly loam
Bt1—10 to 21 inches; gravelly silty clay
Bt2—21 to 34 inches; gravelly silty clay
Bt3—34 to 59 inches; silty clay
Bt4—59 to 72 inches; silty clay

Characteristics of Jocal Taxadjunct Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.3 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 3 inches; slightly decomposed plant material
A—3 to 4 inches; gravelly loam
Bw—4 to 9 inches; gravelly loam
Bt1—9 to 19 inches; gravelly loam
Bt2—19 to 33 inches; gravelly loam
Bt3—33 to 46 inches; very gravelly clay loam
BCt—46 to 52 inches; extremely gravelly clay loam
Cr—52 to 68 inches; bedrock

Minor Components in Map Unit 882

Rogerville and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Mac gravelly loam and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to bedrock
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Palexerults, mesic, and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Fine textured soils that are 20 to 60 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

883—Sites-Jocal taxadjuncts, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, watershed, and wildlife habitat
Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains
Elevation: 2,700 to 3,700 feet (823 to 1,128 meters)
Mean annual precipitation: 60 to 80 inches (1,524 to 2,030 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 130 to 180 days

Map Unit Composition

Sites taxadjunct gravelly loam—50 percent
Jocal taxadjunct gravelly loam—40 percent
Minor components—10 percent

Characteristics of Sites Taxadjunct Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metasedimentary mountains
Parent material: Silty and clayey colluvium and/or residuum weathered from metasedimentary rocks
Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 7.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 3 inches; gravelly loam
BA—3 to 10 inches; very gravelly loam
Bt1—10 to 21 inches; gravelly silty clay
Bt2—21 to 34 inches; gravelly silty clay
Bt3—34 to 59 inches; silty clay
Bt4—59 to 72 inches; silty clay

Characteristics of Jocal Taxadjunct Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metasedimentary mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from metasedimentary rocks

Observed vegetation: Ponderosa pine, Douglas-fir, Pacific madrone, incense cedar, sugar pine, tanoak, California black oak, white fir, deerbrush, and Pacific poison oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 15 percent coarse, subangular gravel
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 3 inches; slightly decomposed plant material
A—3 to 4 inches; gravelly loam
Bw—4 to 9 inches; gravelly loam
Bt1—9 to 19 inches; gravelly loam
Bt2—19 to 33 inches; gravelly loam
Bt3—33 to 46 inches; very gravelly clay loam
BCt—46 to 52 inches; extremely gravelly clay loam
Cr—52 to 68 inches; bedrock

Minor Components in Map Unit 883

Mac gravelly loam and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metasedimentary mountains
Hydric soil status: Not hydric

Palexerults, mesic, and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metasedimentary mountains
Hydric soil status: Not hydric

Fine textured soils that are 20 to 60 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metasedimentary mountains
Hydric soil status: Not hydric

Fine-loamy soils that are more than 60 inches deep to bedrock
Composition: 2 percent
Slope: 50 to 70 percent

Geomorphic position: Backslopes on metasedimentary mountains
Hydric soil status: Not hydric

885—Rogerville silt loam, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,300 to 4,195 feet (1,006 to 1,280 meters)
Mean annual precipitation: 65 to 80 inches (1,651 to 2,032 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 140 to 170 days

Map Unit Composition

Rogerville silt loam—75 percent
Minor components—25 percent

Characteristics of Rogerville Silt Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Parent material: Silty and clayey residuum weathered from ultramafic rocks
Observed vegetation: Douglas-fir, sugar pine, ponderosa pine, white fir, tanoak, Pacific madrone, California black oak, incense cedar, manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 6.3 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 3e-1
- *Land capability, nonirrigated:* 3e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 2 inches; slightly decomposed plant material
- A—2 to 7 inches; silt loam
- Bt1—7 to 13 inches; silty clay loam
- Bt2—13 to 24 inches; silty clay
- Bt3—24 to 34 inches; gravelly silty clay loam
- Bt4—34 to 42 inches; gravelly clay loam
- Bt5—42 to 51 inches; extremely gravelly clay loam
- Cr—51 to 55 inches; bedrock

Minor Components in Map Unit 885

Sites taxadjunct loam and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on metasedimentary mountains
Hydric soil status: Not hydric

Soils that are fine-silty in the upper part and clayey in the lower part
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Hydric soil status: Not hydric

Fine textured soils that are more than 60 inches deep to paralithic bedrock
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Hydric soil status: Not hydric

Soils that are fine-loamy in the upper part and clayey in the lower part
Composition: 4 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Hydric soil status: Not hydric

Soils that overlie peridotite or serpentine bedrock (lithic)
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Hydric soil status: Not hydric

Soils that have andic material on the surface
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Hydric soil status: Not hydric

Soils that have a mechanically altered surface layer
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on ultramafic mountains
Hydric soil status: Not hydric

Toadtown and similar soils
Composition: 1 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

Powellton and similar soils
Composition: 1 percent
Slope: 2 to 15 percent

Geomorphic position: Ridgetops on intrusive igneous and metamorphic mountains
Hydric soil status: Not hydric

886—Rogerville silt loam, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,300 to 4,195 feet (1,006 to 1,280 meters)
Mean annual precipitation: 65 to 80 inches (1,651 to 2,032 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 140 to 170 days

Map Unit Composition

Rogerville silt loam—80 percent
Minor components—20 percent

Characteristics of Rogerville Silt Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on ultramafic mountains
Parent material: Silty and clayey residuum and/or colluvium derived from ultramafic rocks
Observed vegetation: Douglas-fir, sugar pine, ponderosa pine, white fir, tanoak, Pacific madrone, California black oak, incense cedar, manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 6.3 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 4e-1
- *Land capability, nonirrigated:* 4e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 2 inches; slightly decomposed plant material
- A—2 to 7 inches; silt loam
- Bt1—7 to 13 inches; silty clay loam
- Bt2—13 to 24 inches; silty clay
- Bt3—24 to 34 inches; gravelly silty clay loam
- Bt4—34 to 42 inches; gravelly clay loam

Bt5—42 to 51 inches; extremely gravelly clay loam
Cr—51 to 55 inches; bedrock

Minor Components in Map Unit 886

Soils that are fine-silty in the upper part and clayey in the lower part
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Soils that are fine-loamy in the upper part and clayey in the lower part
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Sites taxadjunct gravelly loam and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Fine textured soils that are more than 60 inches deep to paralithic bedrock
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Soils that overlie peridotite or serpentine bedrock (lithic)
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Clayey-skeletal soils
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Soils that have andic material on the surface
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Soils that have a mechanically altered surface layer
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Soils that have a thick A horizon and are on north-facing slopes
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

892—Rogerville silt loam, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,300 to 4,195 feet (1,006 to 1,280 meters)
Mean annual precipitation: 65 to 80 inches (1,651 to 2,032 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 140 to 170 days

Map Unit Composition

Rogerville silt loam—85 percent
Minor components—15 percent

Characteristics of Rogerville Silt Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on ultramafic mountains
Parent material: Silty and clayey residuum and/or colluvium derived from ultramafic rocks
Observed vegetation: Douglas-fir, sugar pine, ponderosa pine, white fir, tanoak, Pacific madrone, California black oak, incense cedar, manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 6.3 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 7e-1
- *Land capability, nonirrigated:* 7e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 2 inches; slightly decomposed plant material
- A—2 to 7 inches; silt loam
- Bt1—7 to 13 inches; silty clay loam
- Bt2—13 to 24 inches; silty clay
- Bt3—24 to 34 inches; gravelly silty clay loam
- Bt4—34 to 42 inches; gravelly clay loam
- Bt5—42 to 51 inches; extremely gravelly clay loam
- Cr—51 to 55 inches; bedrock

Minor Components in Map Unit 892

Sites taxadjunct gravelly loam and similar soils
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Fine textured soils that are more than 60 inches deep to paralithic bedrock
Composition: 5 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to paralithic bedrock
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Soils that are fine-loamy in the upper part and clayey in the lower part
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

893—Rogerville silt loam, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,300 to 4,195 feet (1,006 to 1,280 meters)
Mean annual precipitation: 65 to 80 inches (1,651 to 2,032 millimeters)
Mean annual air temperature: 52 to 54 degrees F (11 to 12 degrees C)
Frost-free period: 140 to 170 days

Map Unit Composition

Rogerville silt loam—85 percent
Minor components—15 percent

Characteristics of Rogerville Silt Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Parent material: Silty and clayey residuum and/or colluvium derived from ultramafic rocks
Observed vegetation: Douglas-fir, sugar pine, ponderosa pine, white fir, tanoak, Pacific madrone, California black oak, incense cedar, manzanita, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 7 inches; silt loam
Bt1—7 to 13 inches; silty clay loam
Bt2—13 to 24 inches; silty clay
Bt3—24 to 34 inches; gravelly silty clay loam
Bt4—34 to 42 inches; gravelly clay loam
Bt5—42 to 51 inches; extremely gravelly clay loam
Cr—51 to 55 inches; bedrock

Minor Components in Map Unit 893

Sites taxadjunct gravelly loam and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Fine textured soils that are more than 60 inches deep to paralithic bedrock
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Fine-loamy soils that are 40 to 60 inches deep to paralithic bedrock
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Soils that are fine-loamy in the upper part and clayey in the lower part
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

902—Lava flows-Lumpkin complex, 0 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Source of aggregate, wildlife habitat, and watershed
Major land resource area: 22A

Landscape: Northern Sierra Nevada Mountains
Elevation: 3,195 to 5,200 feet (975 to 1,585 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 110 to 140 days

Map Unit Composition

Lava flows (Lovejoy basalt)—50 percent
Lumpkin gravelly medial sandy loam—40 percent
Minor components—10 percent

Characteristics of Lava Flows (Lovejoy Basalt)

Slope: 0 to 15 percent
Geomorphic position: The top of basalt ridges
Surface runoff (bare conditions): Very high
Definition: Lava flows consist of exposed basalt formed from lateral surficial outpouring of molten lava from a vent or fissure (fig. 27).

Characteristics of Lumpkin Gravelly Medial Sandy Loam

Slope: 0 to 15 percent
Geomorphic position: The top of basalt ridges
Parent material: Mixed tephra and gravelly and cobbly residuum weathered from basalt
Observed vegetation: Scattered ponderosa pine, incense cedar, California black oak, manzanita, and annual grasses and forbs
Texture of the surface layer: Gravelly medial sandy loam
Percentage of the surface covered by rock fragments: 10 to 80 percent coarse gravel, 2 to 20 percent cobbles, 0 to 5 percent stones

Figure 27.—An area of Lava flows. Fall River Canyon is in the background; Shake Ridge is on the left, and Lumpkin Ridge is on the right.

Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.7 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 3 inches; gravelly medial sandy loam
Bw1—3 to 8 inches; extremely gravelly medial fine sandy loam
Bw2—8 to 14 inches; extremely cobbly medial sandy loam
R—14 inches; bedrock

Minor Components in Map Unit 902

Escarpments
Composition: 3 percent
Slope: 15 to 100 percent
Geomorphic position: The top of basalt ridges
Hydric soil status: Not hydric

Medial-skeletal soils that are less than 10 inches deep to lithic bedrock
Composition: 2 percent
Slope: 0 to 15 percent
Geomorphic position: The top of basalt ridges
Hydric soil status: Not hydric

Pits
Composition: 1 percent
Slope: 0 to 15 percent
Geomorphic position: The top of basalt ridges
Hydric soil status: Not hydric

Lavatop and similar soils
Composition: 1 percent
Slope: 0 to 15 percent
Geomorphic position: The top of basalt ridges
Hydric soil status: Not hydric

Timberisland and similar soils
Composition: 1 percent
Slope: 0 to 15 percent
Geomorphic position: The top of basalt ridges
Hydric soil status: Not hydric

Springs and riparian areas
Composition: 1 percent
Slope: 0 to 15 percent

Geomorphic position: The top of basalt ridges
Hydric soil status: Hydric

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime
Composition: 1 percent
Slope: 0 to 15 percent
Geomorphic position: The top of basalt ridges
Hydric soil status: Not hydric

903—Mudwash-Timberisland-Lavatop complex, 2 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,195 to 5,200 feet (975 to 1,585 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 46 to 52 degrees F (8 to 11 degrees C)
Frost-free period: 110 to 140 days

Map Unit Composition

Mudwash gravelly medial sandy loam—45 percent
Timberisland very gravelly medial sandy loam—25 percent
Lavatop gravelly medial fine sandy loam—20 percent
Minor components—10 percent

Characteristics of Mudwash Gravelly Medial Sandy Loam

Slope: 2 to 30 percent
Geomorphic position: Concave areas on the top and side slopes of basalt ridges
Parent material: Mixed tephra over gravelly colluvium and/or residuum weathered from basalt
Observed vegetation: White fir, incense cedar, ponderosa pine, sugar pine, whitethorn ceanothus, deerbrush, and manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 0 to 25 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1

Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oa—1 to 4 inches; moderately decomposed plant material
A1—4 to 8 inches; gravelly medial sandy loam
A2—8 to 13 inches; gravelly medial sandy loam
Bw—13 to 26 inches; gravelly medial sandy loam
2Bt1—26 to 35 inches; gravelly loam
2Bt2—35 to 52 inches; gravelly loam
2BCt—52 to 72 inches; extremely gravelly loam
2Cr—72 to 89 inches; bedrock

Characteristics of Timberisland Very Gravelly Medial Sandy Loam

Slope: 2 to 30 percent
Geomorphic position: The top and side slopes of basalt ridges
Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from basalt
Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, and manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 40 percent coarse, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A1—3 to 6 inches; very gravelly medial sandy loam
A2—6 to 14 inches; very gravelly medial sandy loam
Bw1—14 to 25 inches; very gravelly medial sandy loam
Bw2—25 to 35 inches; extremely cobbly medial sandy loam
Bw3—35 to 48 inches; extremely cobbly medial sandy loam
2R—48 inches; bedrock

Characteristics of Lavatop Gravelly Medial Fine Sandy Loam

Slope: 2 to 30 percent
Geomorphic position: The top and side slopes of basalt ridges

Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from basalt
Observed vegetation: Ponderosa pine, incense cedar, white fir, Douglas-fir, California black oak, and manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 30 percent coarse, subangular gravel, 0 to 40 percent subangular cobbles, 0 to 30 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 4 inches; gravelly medial fine sandy loam
Bw1—4 to 15 inches; very gravelly medial sandy loam
Bw2—15 to 26 inches; extremely gravelly medial sandy loam
R—26 inches; bedrock

Minor Components in Map Unit 903

Lumpkin and similar soils
Composition: 3 percent
Slope: 2 to 30 percent
Geomorphic position: The top and side slopes of basalt ridges
Hydric soil status: Not hydric

Escarpments
Composition: 2 percent
Slope: 30 to 100 percent
Geomorphic position: The top and side slopes of basalt ridges
Hydric soil status: Not hydric

Lava flows
Composition: 2 percent
Slope: 2 to 30 percent
Geomorphic position: The top and side slopes of basalt ridges
Hydric soil status: Not hydric

Soils that are underlain by paralithic bedrock
Composition: 1 percent
Slope: 2 to 30 percent
Geomorphic position: The top and side slopes of basalt ridges
Hydric soil status: Not hydric

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime
Composition: 1 percent
Slope: 2 to 30 percent
Geomorphic position: The top and side slopes of basalt ridges
Hydric soil status: Not hydric

Soils that are less than 10 inches deep to lithic bedrock
Composition: 1 percent
Slope: 2 to 30 percent
Geomorphic position: The top and side slopes of basalt ridges
Hydric soil status: Not hydric

904—Lava flows-Lavatop complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Wildlife habitat, watershed, and limited timber production
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,195 to 5,200 feet (975 to 1,585 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 110 to 140 days

Map Unit Composition

Lava flows (Lovejoy basalt)—60 percent
Lavatop gravelly medial fine sandy loam—20 percent
Minor components—20 percent

Characteristics of Lava Flows (Lovejoy Basalt)

Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Surface runoff (bare conditions): Very high
Definition: Lava flows consist of exposed basalt formed from lateral surficial outpouring of molten lava from a vent or fissure.

Characteristics of Lavatop Gravelly Medial Fine Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from basalt
Observed vegetation: Scattered ponderosa pine, greenleaf manzanita, California black oak, buckwheat, and annual grasses and forbs
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 30 percent coarse, subangular gravel, 0 to 40 percent subangular cobbles, 0 to 30 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Very low (about 1.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 4 inches; gravelly medial fine sandy loam
Bw1—4 to 15 inches; very gravelly medial sandy loam
Bw2—15 to 26 inches; extremely gravelly medial sandy loam
R—26 inches; bedrock

Minor Components in Map Unit 904

Lumpkin and similar soils
Composition: 5 percent
Slope: 2 to 15 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Timberisland and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Escarpments
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Springs and riparian areas
Composition: 2 percent
Slope: 2 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Hydric

905—Lava flows-Lumpkin complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Wildlife habitat and watershed

Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,195 to 5,200 feet (975 to 1,585 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 110 to 140 days

Map Unit Composition

Lava flows (Lovejoy basalt)—60 percent
Lumpkin gravelly medial sandy loam—30 percent
Minor components—10 percent

Characteristics of Lava Flows (Lovejoy Basalt)

Slope: 30 to 50 percent
Geomorphic position: Benches on side slopes on basalt ridges
Surface runoff (bare conditions): Very high
Definition: Lava flows consist of exposed basalt formed from lateral surficial outpouring of molten lava from a vent or fissure.

Characteristics of Lumpkin Gravelly Medial Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on basalt ridges
Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from basalt
Observed vegetation: Scattered ponderosa pine, greenleaf manzanita, California black oak, buckwheat, and annual grasses and forbs
Texture of the surface layer: Gravelly medial sandy loam
Percentage of the surface covered by rock fragments: 10 to 80 percent coarse gravel, 2 to 20 percent cobbles, 0 to 5 percent stones
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.7 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 3 inches; gravelly medial sandy loam
Bw1—3 to 8 inches; extremely gravelly medial fine sandy loam
Bw2—8 to 14 inches; extremely cobbly medial sandy loam
R—14 inches; bedrock

Minor Components in Map Unit 905

Escarpments
Composition: 5 percent
Slope: 50 to 100 percent

Geomorphic position: Backslopes on basalt ridges
Hydric soil status: Not hydric

Lavatop and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on basalt ridges
Hydric soil status: Not hydric

Springs and riparian areas
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on basalt ridges
Hydric soil status: Hydric

906—Lava flows-Lumpkin complex, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Wildlife habitat and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,195 to 5,200 feet (975 to 1,585 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 110 to 140 days

Map Unit Composition

Lava flows (Lovejoy basalt)—60 percent
Lumpkin gravelly medial sandy loam—30 percent
Minor components—10 percent

Characteristics of Lava Flows (Lovejoy Basalt)

Slope: 50 to 70 percent
Geomorphic position: Benches on side slopes on basalt ridges
Surface runoff (bare conditions): Very high
Definition: Lava flows consist of exposed basalt formed from lateral surficial outpouring of molten lava from a vent or fissure.

Characteristics of Lumpkin Gravelly Medial Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Side slopes on basalt ridges
Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from basalt
Observed vegetation: Scattered ponderosa pine, greenleaf manzanita, California black oak, buckwheat, and annual grasses and forbs

Texture of the surface layer: Gravelly medial sandy loam
Percentage of the surface covered by rock fragments: 10 to 80 percent coarse gravel, 2 to 20 percent cobbles, 0 to 5 percent stones
Depth to a restrictive feature (lithic bedrock): 10 to 20 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.7 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 3 inches; gravelly medial sandy loam
Bw1—3 to 8 inches; extremely gravelly medial fine sandy loam
Bw2—8 to 14 inches; extremely cobbly medial sandy loam
R—14 inches; bedrock

Minor Components in Map Unit 906

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime
Composition: 4 percent
Slope: 50 to 70 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Escarpments
Composition: 3 percent
Slope: 70 to 100 percent
Geomorphic position: Backslopes on basalt ridges
Hydric soil status: Not hydric

Soils that have slopes of less than 50 percent and are on narrow benches
Composition: 3 percent
Slope: 2 to 50 percent
Geomorphic position: Benches on side slopes on basalt ridges
Hydric soil status: Not hydric

911—Endoaquolls, 0 to 8 percent slopes

Map Unit Setting

General location: Northeastern Butte County
Major uses: Watershed, wildlife habitat, and livestock grazing
Major land resource area: 22B
Landscape: Northern Sierra Nevada and Southern Cascade Mountains
Elevation: 3,595 to 4,995 feet (1,097 to 1,524 meters)
Mean annual precipitation: 65 to 75 inches (1,651 to 1,905 millimeters)

Mean annual air temperature: 48 to 54 degrees F (9 to 12 degrees C)
Frost-free period: 100 to 180 days

Map Unit Composition

Endoaquolls loam—75 percent
Minor components—25 percent

Characteristics of Endoaquolls Loam

Slope: 0 to 8 percent
Geomorphic position: Meadows in volcanic and metamorphic mountains
Parent material: Fine-loamy alluvium over clayey alluvium over fine-loamy alluvium derived from volcanic and metamorphic rocks
Observed vegetation: Sedges, rushes, annual grasses and forbs, willows, lodgepole pine, ponderosa pine, and incense cedar
Texture of the surface layer: Loam
Percentage of the surface covered by rock fragments: None
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Occasional
Annual ponding frequency: None
Depth to a water table (zone of saturation): 0 to 17 inches
Available water capacity: Very high (about 10.4 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 3 inches; loam
A2—3 to 8 inches; loam
A3—8 to 17 inches; clay loam
Bw—17 to 28 inches; silty clay
Ab—28 to 43 inches; silty clay
2Bg1—43 to 58 inches; loam
2Bg2—58 to 73 inches; sandy clay loam

Minor Components in Map Unit 911

Endoaquolls, frequently flooded for long periods, and similar soils
Composition: 12 percent
Slope: 0 to 8 percent
Geomorphic position: Seeps and channels in meadows in volcanic and metamorphic mountains
Hydric soil status: Hydric

Bonepile taxadjunct, duripan substratum, and similar soils
Composition: 5 percent
Slope: 0 to 8 percent
Geomorphic position: Stream terraces in volcanic mountains
Hydric soil status: Not hydric

Endoaquolls, very gravelly substratum, and similar soils
Composition: 3 percent
Slope: 0 to 8 percent
Geomorphic position: Meadows in volcanic and metamorphic mountains
Hydric soil status: Hydric

Aquic Xerofluvents and similar soils
Composition: 3 percent
Slope: 0 to 4 percent
Geomorphic position: Meadows in volcanic and metamorphic mountains
Hydric soil status: Hydric

Xerofluvents and similar soils
Composition: 2 percent
Slope: 0 to 4 percent
Geomorphic position: Channels in meadows in volcanic and metamorphic mountains
Hydric soil status: Hydric

923—Powderhouse-McNair-Greenwell complex, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 4,595 to 5,695 feet (1,402 to 1,737 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 110 days

Map Unit Composition

Powderhouse medial sandy loam—45 percent
McNair medial coarse sandy loam—25 percent
Greenwell medial sandy loam—20 percent
Minor components—10 percent

Characteristics of Powderhouse Medial Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Parent material: Mixed tephra and gravelly and cobbly residuum weathered from volcanic mudflow
Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, huckleberry oak, greenleaf manzanita, whitethorn ceanothus, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 4 inches; medial sandy loam
A2—4 to 11 inches; medial sandy loam
Bw—11 to 27 inches; very cobbly medial sandy loam
C—27 to 36 inches; very gravelly medial coarse sandy loam
Cr—36 to 82 inches; bedrock

Characteristics of McNair Medial Coarse Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Parent material: Mixed tephra and gravelly residuum weathered from volcanic mudflow
Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Very low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 3 inches; slightly decomposed plant material
A1—3 to 6 inches; medial coarse sandy loam
A2—6 to 16 inches; gravelly medial coarse sandy loam
Bw1—16 to 25 inches; very gravelly medial sandy loam
Bw2—25 to 33 inches; very gravelly medial sandy loam
Bw3—33 to 48 inches; very gravelly medial sandy loam

BC—48 to 57 inches; extremely gravelly coarse sandy loam
Cr—57 to 88 inches; bedrock

Characteristics of Greenwell Medial Sandy Loam

Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Parent material: Mixed tephra and gravelly residuum weathered from volcanic mudflow
Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones, 0 to 5 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A1—3 to 5 inches; medial sandy loam
A2—5 to 10 inches; medial sandy loam
Bw—10 to 18 inches; gravelly medial sandy loam
2BC1—18 to 23 inches; medial sandy loam
2BC2—23 to 32 inches; very gravelly medial sandy loam
2Cr—32 inches; bedrock

Minor Components in Map Unit 923

Rock outcrop
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Medial-skeletal soils that are more than 60 inches deep to bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime
Composition: 2 percent
Slope: 2 to 15 percent

Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Powderhouse very gravelly medial sandy loam and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

Lumpkin taxadjunct and similar soils
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: The top of volcanic ridges
Hydric soil status: Not hydric

924—Powderhouse-McNair-Greenwell complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 4,595 to 5,695 feet (1,402 to 1,737 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 110 days

Map Unit Composition

Powderhouse medial sandy loam—45 percent
McNair medial coarse sandy loam—25 percent
Greenwell medial sandy loam—20 percent
Minor components—10 percent

Characteristics of Powderhouse Medial Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from volcanic mudflow
Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.3 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 4 inches; medial sandy loam
A2—4 to 11 inches; medial sandy loam
Bw—11 to 27 inches; very cobbly medial sandy loam
C—27 to 36 inches; very gravelly medial coarse sandy loam
Cr—36 to 82 inches; bedrock

Characteristics of McNair Medial Coarse Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from volcanic mudflow
Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 3 inches; slightly decomposed plant material
A1—3 to 6 inches; medial coarse sandy loam
A2—6 to 16 inches; gravelly medial coarse sandy loam
Bw1—16 to 25 inches; very gravelly medial sandy loam
Bw2—25 to 33 inches; very gravelly medial sandy loam
Bw3—33 to 48 inches; very gravelly medial sandy loam
BC—48 to 57 inches; extremely gravelly coarse sandy loam
Cr—57 to 88 inches; bedrock

Characteristics of Greenwell Medial Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from volcanic mudflow
Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones, 0 to 5 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A1—3 to 5 inches; medial sandy loam
A2—5 to 10 inches; medial sandy loam
Bw—10 to 18 inches; gravelly medial sandy loam
2BC1—18 to 23 inches; medial sandy loam
2BC2—23 to 32 inches; very gravelly medial sandy loam
2Cr—32 inches; bedrock

Minor Components in Map Unit 924

Medial-skeletal soils that have 18 to 27 percent clay
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Drainageways and riparian areas on side slopes on volcanic ridges
Hydric soil status: Not hydric

Medial-skeletal soils that are more than 60 inches deep to bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Medial soils that have more than 18 percent clay and are on north-facing slopes
Composition: 2 percent
Slope: 15 to 30 percent

Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Lumpkin taxadjunct and similar soils
Composition: 1 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

925—Powderhouse-McNair-Greenwell complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 4,595 to 5,695 feet (1,402 to 1,737 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 110 days

Map Unit Composition

Powderhouse medial sandy loam—45 percent
McNair medial coarse sandy loam—25 percent
Greenwell medial sandy loam—20 percent
Minor components—10 percent

Characteristics of Powderhouse Medial Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from volcanic mudflow
Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed

Available water capacity: Very low (about 2.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 4 inches; medial sandy loam
A2—4 to 11 inches; medial sandy loam
Bw—11 to 27 inches; very cobbly medial sandy loam
C—27 to 36 inches; very gravelly medial coarse sandy loam
Cr—36 to 82 inches; bedrock

Characteristics of McNair Medial Coarse Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from volcanic mudflow
Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.8 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 3 inches; slightly decomposed plant material
A1—3 to 6 inches; medial coarse sandy loam
A2—6 to 16 inches; gravelly medial coarse sandy loam
Bw1—16 to 25 inches; very gravelly medial sandy loam
Bw2—25 to 33 inches; very gravelly medial sandy loam
Bw3—33 to 48 inches; very gravelly medial sandy loam
BC—48 to 57 inches; extremely gravelly coarse sandy loam
Cr—57 to 88 inches; bedrock

Characteristics of Greenwell Medial Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on volcanic ridges
Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from volcanic mudflow
Observed vegetation: White fir, California red fir, incense cedar, sugar pine, ponderosa pine, whitethorn ceanothus, greenleaf manzanita, huckleberry oak, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones, 0 to 5 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 3.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A1—3 to 5 inches; medial sandy loam
A2—5 to 10 inches; medial sandy loam
Bw—10 to 18 inches; gravelly medial sandy loam
2BC1—18 to 23 inches; medial sandy loam
2BC2—23 to 32 inches; very gravelly medial sandy loam
2Cr—32 inches; bedrock

Minor Components in Map Unit 925

Medial-skeletal soils that are more than 60 inches deep to bedrock
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Medial soils that have more than 18 percent clay and are on north-facing slopes
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Soils that have slopes of more than 50 percent
Composition: 2 percent
Slope: 50 to 70 percent

Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

Lumpkin taxadjunct and similar soils
Composition: 1 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on volcanic ridges
Hydric soil status: Not hydric

930—Shakeridge-Timberisland complex, 0 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,595 to 5,495 feet (1,097 to 1,676 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 110 to 140 days

Map Unit Composition

Shakeridge gravelly medial coarse sandy loam—50 percent
Timberisland very gravelly medial sandy loam—40 percent
Minor components—10 percent

Characteristics of Shakeridge Gravelly Medial Coarse Sandy Loam

Slope: 0 to 15 percent
Geomorphic position: Benches and the top of basalt ridges
Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from basalt
Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, huckleberry oak, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 20 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 60 to 100 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.4 inches)

Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 4 inches; gravelly medial coarse sandy loam
A2—4 to 7 inches; gravelly medial coarse sandy loam
Bw1—7 to 19 inches; extremely gravelly medial coarse sandy loam
Bw2—19 to 25 inches; extremely gravelly medial coarse sandy loam
Bw3—25 to 36 inches; very gravelly medial coarse sandy loam
Bw4—36 to 55 inches; extremely gravelly medial coarse sandy loam
Bw5—55 to 71 inches; extremely gravelly medial coarse sandy loam
Bw6—71 to 87 inches; extremely gravelly coarse sandy loam

Characteristics of Timberisland Very Gravelly Medial Sandy Loam

Slope: 0 to 15 percent
Geomorphic position: Benches and the top of basalt ridges
Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from basalt
Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, huckleberry oak, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 40 percent coarse, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A1—3 to 6 inches; very gravelly medial sandy loam
A2—6 to 14 inches; very gravelly medial sandy loam
Bw1—14 to 25 inches; very gravelly medial sandy loam
Bw2—25 to 35 inches; extremely cobbly medial sandy loam
Bw3—35 to 48 inches; extremely cobbly medial sandy loam
2R—48 inches; bedrock

Minor Components in Map Unit 930

Lavatop and similar soils
Composition: 2 percent
Slope: 0 to 15 percent
Geomorphic position: Benches and the top of basalt ridges
Hydric soil status: Not hydric

Mudwash and similar soils
Composition: 2 percent
Slope: 0 to 5 percent
Geomorphic position: Benches and the top of basalt ridges
Hydric soil status: Not hydric

Lumpkin and similar soils
Composition: 2 percent
Slope: 0 to 15 percent
Geomorphic position: Benches and the top of basalt ridges
Hydric soil status: Not hydric

Escarpments
Composition: 2 percent
Slope: 15 to 70 percent
Geomorphic position: Benches and the top of basalt ridges
Hydric soil status: Not hydric

Lava flows
Composition: 1 percent
Slope: 0 to 15 percent
Geomorphic position: Benches and the top of basalt ridges
Hydric soil status: Not hydric

Medial soils that are more than 60 inches deep to lithic bedrock
Composition: 1 percent
Slope: 0 to 15 percent
Geomorphic position: Benches and the top of basalt ridges
Hydric soil status: Not hydric

931—Shakeridge-Mudwash-Timberisland complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,595 to 5,495 feet (1,097 to 1,676 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 45 to 52 degrees F (7 to 11 degrees C)
Frost-free period: 110 to 140 days

Map Unit Composition

Shakeridge gravelly medial coarse sandy loam—40 percent
Mudwash gravelly medial sandy loam—25 percent
Timberisland very gravelly medial sandy loam—15 percent
Minor components—20 percent

Characteristics of Shakeridge Gravelly Medial Coarse Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from basalt
Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, huckleberry oak, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 20 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 60 to 100 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 4 inches; gravelly medial coarse sandy loam
A2—4 to 7 inches; gravelly medial coarse sandy loam
Bw1—7 to 19 inches; extremely gravelly medial coarse sandy loam
Bw2—19 to 25 inches; extremely gravelly medial coarse sandy loam
Bw3—25 to 36 inches; very gravelly medial coarse sandy loam
Bw4—36 to 55 inches; extremely gravelly medial coarse sandy loam
Bw5—55 to 71 inches; extremely gravelly medial coarse sandy loam
Bw6—71 to 87 inches; extremely gravelly coarse sandy loam

Characteristics of Mudwash Gravelly Medial Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from basalt
Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, huckleberry oak, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 0 to 25 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None

Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oa—1 to 4 inches; moderately decomposed plant material
A1—4 to 8 inches; gravelly medial sandy loam
A2—8 to 13 inches; gravelly medial sandy loam
Bw—13 to 26 inches; gravelly medial sandy loam
2Bt1—26 to 35 inches; gravelly loam
2Bt2—35 to 52 inches; gravelly loam
2BCt—52 to 72 inches; extremely gravelly loam
2Cr—72 to 89 inches; bedrock

Characteristics of Timberisland Very Gravelly Medial Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Parent material: Mixed tephra and gravelly and cobbly residuum and/or colluvium derived from basalt
Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, huckleberry oak, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 5 to 40 percent coarse, subangular gravel, 0 to 25 percent subangular cobbles, 0 to 15 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (lithic bedrock): 40 to 60 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
Oe—2 to 3 inches; moderately decomposed plant material
A1—3 to 6 inches; very gravelly medial sandy loam
A2—6 to 14 inches; very gravelly medial sandy loam

Bw1—14 to 25 inches; very gravelly medial sandy loam
Bw2—25 to 35 inches; extremely cobbly medial sandy loam
Bw3—35 to 48 inches; extremely cobbly medial sandy loam
2R—48 inches; bedrock

Minor Components in Map Unit 931

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime
Composition: 6 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Lavatop and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Soils that have slopes of more than 30 percent
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Soils that have slopes of less than 15 percent
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Soils that have more than 27 percent clay
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Lava flows
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Lumpkin and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Springs and riparian areas
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Hydric

932—Shakeridge-Mudwash complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,595 to 5,495 feet (1,097 to 1,676 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 46 to 52 degrees F (8 to 11 degrees C)
Frost-free period: 110 to 140 days

Map Unit Composition

Shakeridge gravelly medial coarse sandy loam—50 percent
Mudwash gravelly medial sandy loam—35 percent
Minor components—15 percent

Characteristics of Shakeridge Gravelly Medial Coarse Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on basalt ridges
Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from basalt
Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, and huckleberry oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 20 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones
Depth to a restrictive feature (lithic bedrock): 60 to 100 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very low (about 2.4 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 6e-1
- *Land capability, nonirrigated:* 6e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 2 inches; slightly decomposed plant material
- A1—2 to 4 inches; gravelly medial coarse sandy loam
- A2—4 to 7 inches; gravelly medial coarse sandy loam
- Bw1—7 to 19 inches; extremely gravelly medial coarse sandy loam
- Bw2—19 to 25 inches; extremely gravelly medial coarse sandy loam
- Bw3—25 to 36 inches; very gravelly medial coarse sandy loam
- Bw4—36 to 55 inches; extremely gravelly medial coarse sandy loam

Bw5—55 to 71 inches; extremely gravelly medial coarse sandy loam
Bw6—71 to 87 inches; extremely gravelly coarse sandy loam

Characteristics of Mudwash Gravelly Medial Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on basalt ridges
Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from basalt
Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, and huckleberry oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 0 to 25 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 5.5 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
Oa—1 to 4 inches; moderately decomposed plant material
A1—4 to 8 inches; gravelly medial sandy loam
A2—8 to 13 inches; gravelly medial sandy loam
Bw—13 to 26 inches; gravelly medial sandy loam
2Bt1—26 to 35 inches; gravelly loam
2Bt2—35 to 52 inches; gravelly loam
2BCt—52 to 72 inches; extremely gravelly loam
2Cr—72 to 89 inches; bedrock

Minor Components in Map Unit 932

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Lavatop and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Talus
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Backslopes on basalt ridges
Hydric soil status: Not hydric

Escarpments
Composition: 2 percent
Slope: 50 to 100 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Timberisland and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

Soils that have quartz diorite in the substratum
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on basalt ridges
Hydric soil status: Not hydric

933—Shakeridge gravelly medial coarse sandy loam, 50 to 70 percent slopes

Map Unit Setting

General location: Eastern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,595 to 5,495 feet (1,097 to 1,676 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 50 to 52 degrees F (10 to 11 degrees C)
Frost-free period: 110 to 140 days

Map Unit Composition

Shakeridge gravelly medial coarse sandy loam—80 percent
Minor components—20 percent

Characteristics of Shakeridge Gravelly Medial Coarse Sandy Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on basalt ridges
Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from basalt
Observed vegetation: Ponderosa pine, incense cedar, California black oak, white fir, sugar pine, deerbrush, and huckleberry oak
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 10 to 20 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones

Depth to a restrictive feature (lithic bedrock): 60 to 100 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.4 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 4 inches; gravelly medial coarse sandy loam
A2—4 to 7 inches; gravelly medial coarse sandy loam
Bw1—7 to 19 inches; extremely gravelly medial coarse sandy loam
Bw2—19 to 25 inches; extremely gravelly medial coarse sandy loam
Bw3—25 to 36 inches; very gravelly medial coarse sandy loam
Bw4—36 to 55 inches; extremely gravelly medial coarse sandy loam
Bw5—55 to 71 inches; extremely gravelly medial coarse sandy loam
Bw6—71 to 87 inches; extremely gravelly coarse sandy loam

Minor Components in Map Unit 933

Timberisland and similar soils
Composition: 9 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on basalt ridges
Hydric soil status: Not hydric

Mudwash and similar soils
Composition: 4 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on basalt ridges
Hydric soil status: Not hydric

Lavatop and similar soils
Composition: 3 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on basalt ridges
Hydric soil status: Not hydric

Medial soils that are more than 60 inches deep to lithic bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on basalt ridges
Hydric soil status: Not hydric

Soils that are more than 40 inches deep to quartz diorite bedrock
Composition: 2 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on basalt ridges
Hydric soil status: Not hydric

934—Mudwash gravelly medial sandy loam, 0 to 15 percent slopes

Map Unit Setting

General location: Southern Butte County and southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,595 to 5,200 feet (1,097 to 1,585 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 45 to 52 degrees F (7 to 11 degrees C)
Frost-free period: 110 to 140 days

Map Unit Composition

Mudwash gravelly medial sandy loam—80 percent
Minor components—20 percent

Characteristics of Mudwash Gravelly Medial Sandy Loam

Slope: 0 to 15 percent
Geomorphic position: The top of basalt ridges
Parent material: Mixed tephra and gravelly residuum and/or colluvium derived from basalt
Observed vegetation: Ponderosa pine, incense cedar, white fir, sugar pine, whitethorn ceanothus, deerbrush, and manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subangular gravel, 0 to 25 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Moderate (about 5.5 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Low

Interpretive groups
- *Land capability, irrigated:* 3e-1
- *Land capability, nonirrigated:* 3e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 1 inch; slightly decomposed plant material
- Oa—1 to 4 inches; moderately decomposed plant material
- A1—4 to 8 inches; gravelly medial sandy loam
- A2—8 to 13 inches; gravelly medial sandy loam
- Bw—13 to 26 inches; gravelly medial sandy loam
- 2Bt1—26 to 35 inches; gravelly loam
- 2Bt2—35 to 52 inches; gravelly loam
- 2BCt—52 to 72 inches; extremely gravelly loam
- 2Cr—72 to 89 inches; bedrock

Minor Components in Map Unit 934

Shakeridge and similar soils
Composition: 6 percent
Slope: 0 to 15 percent
Geomorphic position: The top of basalt ridges
Hydric soil status: Not hydric

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime
Composition: 6 percent
Slope: 0 to 15 percent
Geomorphic position: The top of basalt ridges
Hydric soil status: Not hydric

Springs and riparian areas
Composition: 4 percent
Slope: 0 to 15 percent
Geomorphic position: The top of basalt ridges
Hydric soil status: Hydric

Soils that are 40 to 60 inches deep to paralithic bedrock
Composition: 4 percent
Slope: 0 to 15 percent
Geomorphic position: The top of basalt ridges
Hydric soil status: Not hydric

939—Fluvaquentic Humaquepts, 0 to 15 percent slopes

Map Unit Setting

General location: Southwestern Plumas County
Major uses: Wildlife habitat and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 3,995 to 5,400 feet (1,219 to 1,646 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 50 to 54 degrees F (10 to 12 degrees C)
Frost-free period: 110 to 150 days

Map Unit Composition

Fluvaquentic Humaquepts very fine sandy loam—85 percent
Minor components—15 percent

Characteristics of Fluvaquentic Humaquepts Very Fine Sandy Loam

Slope: 0 to 15 percent
Geomorphic position: Meadows in granitic mountains
Parent material: Fine-loamy alluvium derived from quartz diorite
Observed vegetation: Sedges, rushes, annual grasses and forbs, and mountain alder
Texture of the surface layer: Very fine sandy loam
Percentage of the surface covered by rock fragments: 0 to 5 percent rounded gravel
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: Rare
Annual ponding frequency: None

Depth to a water table (zone of saturation): 0 to 60 inches
Available water capacity: High (about 9.4 inches)
Natural drainage class: Poorly drained
Surface runoff (bare conditions): Very high

Interpretive groups
Land capability, irrigated: 5w-2
Land capability, nonirrigated: 5w-2
Hydric soil status: Hydric
Hydrologic soil group: D

Typical profile
A1—0 to 7 inches; very fine sandy loam
A2—7 to 15 inches; very fine sandy loam
Bw1—15 to 22 inches; loam
Bw2—22 to 29 inches; loam
Bw3—29 to 36 inches; loam
2Bw—36 to 45 inches; gravelly clay loam
2BC—45 to 60 inches; gravelly loam

Minor Components in Map Unit 939

At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime
Composition: 10 percent
Slope: 0 to 15 percent
Geomorphic position: Meadows in metamorphic mountains
Hydric soil status: Hydric

Soils that are partially drained
Composition: 5 percent
Slope: 0 to 2 percent
Geomorphic position: Meadows in granitic and metamorphic mountains
Hydric soil status: Not hydric

940—Dejonah-Stagpoint complex, 2 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 4,500 to 5,895 feet (1,372 to 1,798 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 110 days

Map Unit Composition

Dejonah gravelly loam—50 percent
Stagpoint loam—30 percent
Minor components—20 percent

Characteristics of Dejonah Gravelly Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and benches on metamorphic mountains
Parent material: Fine-loamy residuum weathered from metamorphic rocks

Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 10 inches; loam
2Bt2—10 to 16 inches; loam
2Bt3—16 to 28 inches; loam
2Bt4—28 to 37 inches; loam
2BC1—37 to 53 inches; sandy loam
2BC2—53 to 60 inches; loam

Characteristics of Stagpoint Loam

Slope: 2 to 15 percent
Geomorphic position: Ridgetops and benches on metamorphic mountains
Parent material: Loamy, cobbly and gravelly residuum weathered from metamorphic rocks
Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 100 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 4 inches; loam
Bt1—4 to 10 inches; gravelly loam
Bt2—10 to 17 inches; very gravelly loam
2Bt3—17 to 23 inches; very gravelly loam
2Bt4—23 to 34 inches; extremely cobbly loam
2BCt1—34 to 49 inches; extremely cobbly loam
2BCt2—49 to 64 inches; extremely stony loam
2C—64 to 86 inches; very stony loam

Minor Components in Map Unit 940

At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime
Composition: 9 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and benches on metamorphic mountains
Hydric soil status: Not hydric

Haploxerands and similar soils
Composition: 3 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and benches on metamorphic mountains
Hydric soil status: Not hydric

Soils that have less than 18 percent clay
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and benches on metamorphic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 20 to 40 inches deep to bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and benches on metamorphic mountains
Hydric soil status: Not hydric

Soils that are 20 to 40 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and benches on metamorphic mountains
Hydric soil status: Not hydric

Soils that have more than 35 percent clay in the subsoil
Composition: 2 percent
Slope: 2 to 15 percent
Geomorphic position: Ridgetops and benches on metamorphic mountains
Hydric soil status: Not hydric

941—Dejonah-Stagpoint complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 4,500 to 5,895 feet (1,372 to 1,798 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 110 days

Map Unit Composition

Dejonah gravelly loam—50 percent
Stagpoint loam—30 percent
Minor components—20 percent

Characteristics of Dejonah Gravelly Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes, ridgetops, and benches on metamorphic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* High (about 8.9 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* Medium

Interpretive groups
- *Land capability, irrigated:* 4e-1
- *Land capability, nonirrigated:* 4e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 1 inch; slightly decomposed plant material
- A—1 to 4 inches; gravelly loam
- Bt1—4 to 10 inches; loam
- 2Bt2—10 to 16 inches; loam
- 2Bt3—16 to 28 inches; loam
- 2Bt4—28 to 37 inches; loam
- 2BC1—37 to 53 inches; sandy loam
- 2BC2—53 to 60 inches; loam

Characteristics of Stagpoint Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes, ridgetops, and benches on metamorphic mountains
Parent material: Loamy, cobbly and gravelly colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 100 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 4 inches; loam
Bt1—4 to 10 inches; gravelly loam
Bt2—10 to 17 inches; very gravelly loam
2Bt3—17 to 23 inches; very gravelly loam
2Bt4—23 to 34 inches; extremely cobbly loam
2BCt1—34 to 49 inches; extremely cobbly loam
2BCt2—49 to 64 inches; extremely stony loam
2C—64 to 86 inches; very stony loam

Minor Components in Map Unit 941

At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime
Composition: 9 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes, ridgetops, and benches on metamorphic mountains
Hydric soil status: Not hydric

Loamy-skeletal alluvial soils that have a high content of quartz
Composition: 4 percent
Slope: 15 to 30 percent
Geomorphic position: Draws on metamorphic mountains
Hydric soil status: Not hydric

Soils that have a high content of silt and overlie metatuff
Composition: 3 percent
Slope: 15 to 30 percent

Geomorphic position: Side slopes, ridgetops, and benches on metamorphic mountains
Hydric soil status: Not hydric

Soils that have less than 18 percent clay
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes, ridgetops, and benches on metamorphic mountains
Hydric soil status: Not hydric

Soils that are 40 to 60 inches deep to paralithic bedrock
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes, ridgetops, and benches on metamorphic mountains
Hydric soil status: Not hydric

942—Stagpoint-Dejonah complex, 30 to 50 percent slopes

Map Unit Setting

General location: Eastern Butte County and western Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 4,500 to 5,895 feet (1,372 to 1,798 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 110 days

Map Unit Composition

Stagpoint loam—50 percent
Dejonah gravelly loam—30 percent
Minor components—20 percent

Characteristics of Stagpoint Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metamorphic mountains
Parent material: Loamy, cobbly and gravelly colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones, 0 to 5 percent subangular boulders
Depth to a restrictive feature (paralithic bedrock): 60 to 100 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 4 inches; loam
Bt1—4 to 10 inches; gravelly loam
Bt2—10 to 17 inches; very gravelly loam
2Bt3—17 to 23 inches; very gravelly loam
2Bt4—23 to 34 inches; extremely cobbly loam
2BCt1—34 to 49 inches; extremely cobbly loam
2BCt2—49 to 64 inches; extremely stony loam
2C—64 to 86 inches; very stony loam

Characteristics of Dejonah Gravelly Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metamorphic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material
A—1 to 4 inches; gravelly loam
Bt1—4 to 10 inches; loam
2Bt2—10 to 16 inches; loam
2Bt3—16 to 28 inches; loam
2Bt4—28 to 37 inches; loam
2BC1—37 to 53 inches; sandy loam
2BC2—53 to 60 inches; loam

Minor Components in Map Unit 942

At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime
Composition: 9 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metamorphic mountains
Hydric soil status: Not hydric

Soils that have more than 35 percent clay in the subsoil
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metamorphic mountains
Hydric soil status: Not hydric

Soils that have less than 18 percent clay
Composition: 4 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metamorphic mountains
Hydric soil status: Not hydric

Soils that are underlain by metagabbro bedrock (paralithic)
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metamorphic mountains
Hydric soil status: Not hydric

948—Stagpoint-Dejonah complex, 50 to 70 percent slopes

Map Unit Setting

General location: Southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 4,500 to 5,895 feet (1,372 to 1,798 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 110 days

Map Unit Composition

Stagpoint loam—55 percent
Dejonah gravelly loam—35 percent
Minor components—10 percent

Characteristics of Stagpoint Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metamorphic mountains
Parent material: Loamy, cobbly and gravelly colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles, 0 to 5 percent subangular stones, 0 to 5 percent subangular boulders

Depth to a restrictive feature (paralithic bedrock): 60 to 100 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Low (about 4.0 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 4 inches; loam
Bt1—4 to 10 inches; gravelly loam
Bt2—10 to 17 inches; very gravelly loam
2Bt3—17 to 23 inches; very gravelly loam
2Bt4—23 to 34 inches; extremely cobbly loam
2BCt1—34 to 49 inches; extremely cobbly loam
2BCt2—49 to 64 inches; extremely stony loam
2C—64 to 86 inches; very stony loam

Characteristics of Dejonah Gravelly Loam

Slope: 50 to 70 percent
Geomorphic position: Backslopes on metamorphic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from metamorphic rocks
Observed vegetation: White fir, California red fir, sugar pine, incense cedar, ponderosa pine, Sierra chinquapin, whitethorn ceanothus, and greenleaf manzanita
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subangular gravel, 0 to 10 percent subangular cobbles
Depth to a restrictive feature (paralithic bedrock): 60 to 80 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 8.9 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 7e-1
Land capability, nonirrigated: 7e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly loam
Bt1—4 to 10 inches; loam
2Bt2—10 to 16 inches; loam
2Bt3—16 to 28 inches; loam
2Bt4—28 to 37 inches; loam
2BC1—37 to 53 inches; sandy loam
2BC2—53 to 60 inches; loam

Minor Components in Map Unit 948

At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime
Composition: 9 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

Soils that have less than 18 percent clay
Composition: 1 percent
Slope: 50 to 70 percent
Geomorphic position: Backslopes on metamorphic mountains
Hydric soil status: Not hydric

949—Rogerville taxadjunct, 30 to 50 percent slopes

Map Unit Setting

General location: Southwestern Plumas County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 4,795 to 5,600 feet (1,463 to 1,707 meters)
Mean annual precipitation: 75 to 80 inches (1,905 to 2,032 millimeters)
Mean annual air temperature: 45 to 50 degrees F (7 to 10 degrees C)
Frost-free period: 80 to 110 days

Map Unit Composition

Rogerville taxadjunct fine sandy loam—80 percent
Minor components—20 percent

Characteristics of Rogerville Taxadjunct Fine Sandy Loam

Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Parent material: Fine-loamy colluvium and/or residuum weathered from ultramafic rocks
Observed vegetation: White fir, California red fir, incense cedar, Douglas-fir, sugar pine, whitethorn ceanothus, Sierra chinquapin, huckleberry oak, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded gravel
Depth to a restrictive feature (paralithic bedrock): 40 to 60 inches
Shrink-swell potential: Moderate (LEP of 3 to less than 6)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Moderate (about 6.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 4 inches; fine sandy loam
Bw1—4 to 7 inches; gravelly sandy loam
Bw2—7 to 21 inches; very gravelly sandy loam
Bw3—21 to 26 inches; very gravelly loam
2Bt1—26 to 33 inches; gravelly silt loam
2Bt2—33 to 44 inches; gravelly silt loam
2Bt3—44 to 57 inches; gravelly silty clay loam
2Cr—57 inches; bedrock

Minor Components in Map Unit 949

Soils that are 10 to 20 inches deep to peridotite bedrock
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are more than 60 inches deep to peridotite bedrock
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Loamy-skeletal soils that are 40 to 60 inches deep to bedrock
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on ultramafic mountains
Hydric soil status: Not hydric

Dejonah gravelly loam and similar soils
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

Stagpoint loam and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic mountains
Hydric soil status: Not hydric

950—Lumpkin taxadjunct-Rock outcrop-Powderhouse complex, 0 to 15 percent slopes

Map Unit Setting

General location: Eastern Butte County and western Plumas County
Major uses: Wildlife habitat, watershed, and limited timber production
Major land resource area: 22A
Landscape: Northern Sierra Nevada and Southern Cascade Mountains
Elevation: 4,520 to 6,115 feet (1,378 to 1,865 meters)
Mean annual precipitation: 75 to 85 inches (1,905 to 2,159 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 110 days

Map Unit Composition

Lumpkin taxadjunct very gravelly medial very fine sandy loam—40 percent
Rock outcrop (olivine basalt, andesite, or mudflow)—25 percent
Powderhouse medial sandy loam—20 percent
Minor components—15 percent

Characteristics of Lumpkin Taxadjunct Very Gravelly Medial Very Fine Sandy Loam

Slope: 0 to 15 percent
Geomorphic position: The top and side slopes of volcanic nunataks and ridges
Parent material: Mixed tephra and cobbly and gravelly residuum weathered from volcanic rocks
Observed vegetation: Scattered ponderosa pine, incense cedar, California red fir, white fir, California black oak, whitethorn ceanothus, greenleaf manzanita, buckwheat, and annual grasses and forbs
Texture of the surface layer: Very gravelly medial very fine sandy loam
Percentage of the surface covered by rock fragments: 15 to 30 percent subrounded cobbles, 50 to 70 percent subrounded gravel, 0 to 20 percent subrounded stones
Depth to a restrictive feature (lithic bedrock): 5 to 10 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* Very low (about 0.7 inch)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 8
- *Land capability, nonirrigated:* 8
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* D

Typical profile
- A—0 to 4 inches; very gravelly medial very fine sandy loam
- Bw—4 to 9 inches; very gravelly medial very fine sandy loam
- R—9 inches; bedrock

Characteristics of Rock Outcrop (Olivine Basalt, Andesite, or Mudflow)

Slope: 0 to 15 percent
Geomorphic position: The top and side slopes of volcanic nunataks and ridges
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Characteristics of Powderhouse Medial Sandy Loam

Slope: 0 to 15 percent
Geomorphic position: The top and side slopes of volcanic nunataks and ridges
Parent material: Mixed tephra and cobbly and gravelly residuum weathered from volcanic rocks
Observed vegetation: White fir, California red fir, incense cedar, ponderosa pine, greenleaf manzanita, huckleberry oak, whitethorn ceanothus, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 4 inches; medial sandy loam
A2—4 to 11 inches; medial sandy loam
Bw—11 to 27 inches; very cobbly medial sandy loam
C—27 to 36 inches; very gravelly medial coarse sandy loam
Cr—36 to 82 inches; bedrock

Minor Components in Map Unit 950

Medial-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 3 percent
Slope: 0 to 15 percent
Geomorphic position: The top and side slopes of volcanic nunataks and ridges
Hydric soil status: Not hydric

Cliffs
Composition: 3 percent
Slope: 15 to 50 percent
Geomorphic position: Side slopes on volcanic nunataks and ridges
Hydric soil status: Not hydric

Talus
Composition: 3 percent
Slope: 0 to 15 percent
Geomorphic position: Side slopes on volcanic nunataks and ridges
Hydric soil status: Not hydric

Haploxerands, volcanic till, and similar soils
Composition: 3 percent
Slope: 0 to 15 percent
Geomorphic position: Ridgetops and side slopes on moraines
Hydric soil status: Not hydric

At an elevation of less than 4,800 feet, soils with a mesic soil temperature regime
Composition: 3 percent
Slope: 0 to 15 percent
Geomorphic position: The top and side slopes of volcanic ridges
Hydric soil status: Not hydric

951—Lumpkin taxadjunct-Rock outcrop-Powderhouse complex, 15 to 30 percent slopes

Map Unit Setting

General location: Eastern Butte County and western Plumas County
Major uses: Wildlife habitat, watershed, and limited timber production
Major land resource area: 22A
Landscape: Southern Cascade Mountains
Elevation: 4,520 to 6,115 feet (1,378 to 1,865 meters)
Mean annual precipitation: 75 to 85 inches (1,905 to 2,159 millimeters)
Mean annual air temperature: 48 to 50 degrees F (9 to 10 degrees C)
Frost-free period: 80 to 110 days

Map Unit Composition

Lumpkin taxadjunct very gravelly medial very fine sandy loam—40 percent
Rock outcrop (andesite)—25 percent
Powderhouse medial sandy loam—20 percent
Minor components—15 percent

Characteristics of Lumpkin Taxadjunct Very Gravelly Medial Very Fine Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic nunataks and ridges
Parent material: Mixed tephra and cobbly and gravelly residuum and/or colluvium derived from andesite
Observed vegetation: Scattered ponderosa pine, incense cedar, California red fir, white fir, California black oak, whitethorn ceanothus, greenleaf manzanita, buckwheat, and annual grasses and forbs
Texture of the surface layer: Very gravelly medial very fine sandy loam
Percentage of the surface covered by rock fragments: 15 to 30 percent subrounded cobbles, 50 to 70 percent subrounded gravel, 0 to 20 percent subrounded stones
Depth to a restrictive feature (lithic bedrock): 5 to 10 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None

Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 0.7 inch)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 8
Land capability, nonirrigated: 8
Hydric soil status: Not hydric
Hydrologic soil group: D

Typical profile
A—0 to 4 inches; very gravelly medial very fine sandy loam
Bw—4 to 9 inches; very gravelly medial very fine sandy loam
R—9 inches; bedrock

Characteristics of Rock Outcrop (Andesite)

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic nunataks and ridges
Surface runoff (bare conditions): Very high
Definition: Rock outcrop consists of exposures of bedrock with no soil.

Characteristics of Powderhouse Medial Sandy Loam

Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic nunataks and ridges
Parent material: Mixed tephra and cobbly and gravelly residuum and/or colluvium derived from andesite
Observed vegetation: White fir, California red fir, incense cedar, ponderosa pine, greenleaf manzanita, huckleberry oak, whitethorn ceanothus, and Sierra chinquapin
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 10 percent coarse, subrounded gravel, 0 to 10 percent subrounded cobbles, 0 to 10 percent subrounded stones, 0 to 10 percent subrounded boulders
Depth to a restrictive feature (paralithic bedrock): 20 to 40 inches
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: Very low (about 2.3 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 6e-1
Land capability, nonirrigated: 6e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 2 inches; slightly decomposed plant material
A1—2 to 4 inches; medial sandy loam
A2—4 to 11 inches; medial sandy loam
Bw—11 to 27 inches; very cobbly medial sandy loam

C—27 to 36 inches; very gravelly medial coarse sandy loam
Cr—36 to 82 inches; bedrock

Minor Components in Map Unit 951

Medial-skeletal soils that are 10 to 20 inches deep to bedrock
Composition: 6 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic nunataks and ridges
Hydric soil status: Not hydric

Cliffs
Composition: 3 percent
Slope: 30 to 70 percent
Geomorphic position: Side slopes on volcanic nunataks and ridges
Hydric soil status: Not hydric

Talus
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on volcanic nunataks and ridges
Hydric soil status: Not hydric

Haploxerands, volcanic till, and similar soils
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on moraines
Hydric soil status: Not hydric

960—Surnuf gravelly loam, 3 to 8 percent slopes, high elevation

Map Unit Setting

General location: Eastern Butte County and northern Yuba County
Major uses: Timber production, homesite development, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 3,280 feet (610 to 1,000 meters)
Mean annual precipitation: 58 to 65 inches (1,473 to 1,651 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 160 to 230 days

Map Unit Composition

Surnuf gravelly loam, high elevation—85 percent
Minor components—15 percent

Characteristics of Surnuf Gravelly Loam, High Elevation

Slope: 3 to 8 percent
Geomorphic position: Ridgetops on metavolcanic and intrusive igneous mountains
Parent material: Clayey residuum weathered from intrusive igneous and metamorphic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, incense cedar, tanoak, Pacific madrone, mountain misery, and deerbrush

Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent subrounded stones, 0 to 5 percent subrounded cobbles, 0 to 20 percent subrounded gravel
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Low

Interpretive groups
Land capability, irrigated: 2e-1
Land capability, nonirrigated: 2e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 6 inches; gravelly loam
AB—6 to 10 inches; gravelly loam
Bt1—10 to 20 inches; clay loam
Bt2—20 to 28 inches; clay loam
Bt3—28 to 38 inches; gravelly clay
Bt4—38 to 52 inches; gravelly clay
Bt5—52 to 67 inches; gravelly clay
Bt6—67 to 84 inches; gravelly clay

Minor Components in Map Unit 960

Surnuf soils with a subsoil of silty clay and similar soils
Composition: 5 percent
Slope: 3 to 8 percent
Geomorphic position: Ridgetops on metavolcanic and intrusive igneous mountains
Hydric soil status: Not hydric

Sites and similar soils
Composition: 5 percent
Slope: 3 to 8 percent
Geomorphic position: Ridgetops on metasedimentary mountains
Hydric soil status: Not hydric

Soils that have a skeletal subsoil
Composition: 3 percent
Slope: 3 to 8 percent
Geomorphic position: Ridgetops on metavolcanic and intrusive igneous mountains
Hydric soil status: Not hydric

Surnuf soils with slopes of as much as 15 percent and similar soils
Composition: 2 percent
Slope: 8 to 15 percent
Geomorphic position: Ridgetops on metavolcanic and intrusive igneous mountains
Hydric soil status: Not hydric

961—Surnuf gravelly loam, 8 to 15 percent slopes, high elevation

Map Unit Setting

General location: Eastern Butte County and northern Yuba County
Major uses: Timber production, homesite development, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 3,280 feet (610 to 1,000 meters)
Mean annual precipitation: 58 to 65 inches (1,473 to 1,651 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 160 to 230 days

Map Unit Composition

Surnuf gravelly loam, high elevation—85 percent
Minor components—15 percent

Characteristics of Surnuf Gravelly Loam, High Elevation

Slope: 8 to 15 percent
Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains
Parent material: Clayey residuum and/or colluvium derived from intrusive igneous and metamorphic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, incense cedar, tanoak, Pacific madrone, mountain misery, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent subrounded stones, 0 to 5 percent subrounded cobbles, 0 to 20 percent subrounded gravel
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): Medium

Interpretive groups
Land capability, irrigated: 3e-1
Land capability, nonirrigated: 3e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 6 inches; gravelly loam
AB—6 to 10 inches; gravelly loam
Bt1—10 to 20 inches; clay loam
Bt2—20 to 28 inches; clay loam
Bt3—28 to 38 inches; gravelly clay
Bt4—38 to 52 inches; gravelly clay
Bt5—52 to 67 inches; gravelly clay
Bt6—67 to 84 inches; gravelly clay

Minor Components in Map Unit 961

Surnuf soils with a subsoil of silty clay and similar soils
Composition: 5 percent
Slope: 8 to 15 percent
Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains
Hydric soil status: Not hydric

Sites loam and similar soils
Composition: 5 percent
Slope: 8 to 15 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Soils that have a skeletal subsoil
Composition: 3 percent
Slope: 8 to 15 percent
Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains
Hydric soil status: Not hydric

At an elevation of less than 2,800 feet, Surnuf soils on north-facing slopes and similar soils
Composition: 2 percent
Slope: 8 to 15 percent
Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains
Hydric soil status: Not hydric

962—Surnuf gravelly loam, 15 to 30 percent slopes, high elevation

Map Unit Setting

General location: Eastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 3,280 feet (610 to 1,000 meters)
Mean annual precipitation: 58 to 65 inches (1,473 to 1,651 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 160 to 230 days

Map Unit Composition

Surnuf gravelly loam, high elevation—85 percent
Minor components—15 percent

Characteristics of Surnuf Gravelly Loam, High Elevation

Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains
Parent material: Clayey residuum and/or colluvium derived from intrusive igneous and metamorphic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, incense cedar, tanoak, Pacific madrone, mountain misery, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 5 percent subrounded stones, 0 to 5 percent subrounded cobbles, 0 to 20 percent subrounded gravel

Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
Annual flooding frequency: None
Annual ponding frequency: None
Water table (zone of saturation): None observed
Available water capacity: High (about 7.6 inches)
Natural drainage class: Well drained
Surface runoff (bare conditions): High

Interpretive groups
Land capability, irrigated: 4e-1
Land capability, nonirrigated: 4e-1
Hydric soil status: Not hydric
Hydrologic soil group: B

Typical profile
Oi—0 to 0.5 inch; slightly decomposed plant material
A—0.5 inch to 6 inches; gravelly loam
AB—6 to 10 inches; gravelly loam
Bt1—10 to 20 inches; clay loam
Bt2—20 to 28 inches; clay loam
Bt3—28 to 38 inches; gravelly clay
Bt4—38 to 52 inches; gravelly clay
Bt5—52 to 67 inches; gravelly clay
Bt6—67 to 84 inches; gravelly clay

Minor Components in Map Unit 962

Surnuf soils with a subsoil of silty clay and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains
Hydric soil status: Not hydric

Sites loam and similar soils
Composition: 5 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Soils that have a skeletal subsoil
Composition: 3 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains
Hydric soil status: Not hydric

At an elevation of less than 2,800 feet, Surnuf soils on north-facing slopes and similar soils
Composition: 2 percent
Slope: 15 to 30 percent
Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains
Hydric soil status: Not hydric

963—Surnuf gravelly loam, 30 to 50 percent slopes, high elevation

Map Unit Setting

General location: Southeastern Butte County
Major uses: Timber production, wildlife habitat, and watershed
Major land resource area: 22A
Landscape: Northern Sierra Nevada Mountains
Elevation: 2,000 to 3,280 feet (610 to 1,000 meters)
Mean annual precipitation: 58 to 65 inches (1,473 to 1,651 millimeters)
Mean annual air temperature: 54 to 55 degrees F (12 to 13 degrees C)
Frost-free period: 160 to 230 days

Map Unit Composition

Surnuf gravelly loam, high elevation—85 percent
Minor components—15 percent

Characteristics of Surnuf Gravelly Loam, High Elevation

Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains
Parent material: Clayey residuum and/or colluvium derived from intrusive igneous and metamorphic rocks
Observed vegetation: Ponderosa pine, Douglas-fir, incense cedar, tanoak, Pacific madrone, mountain misery, and deerbrush
Texture of the surface layer: Slightly decomposed plant material
Percentage of the surface covered by rock fragments: 0 to 20 percent coarse, subrounded gravel, 0 to 5 percent subrounded cobbles, 0 to 5 percent subrounded stones
Restrictive feature: None identified
Shrink-swell potential: High (LEP of 6 to 9)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* None
- *Annual ponding frequency:* None
- *Water table (zone of saturation):* None observed
- *Available water capacity:* High (about 7.6 inches)
- *Natural drainage class:* Well drained
- *Surface runoff (bare conditions):* High

Interpretive groups
- *Land capability, irrigated:* 6e-1
- *Land capability, nonirrigated:* 6e-1
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* B

Typical profile
- Oi—0 to 0.5 inch; slightly decomposed plant material
- A—0.5 inch to 6 inches; gravelly loam
- AB—6 to 10 inches; gravelly loam
- Bt1—10 to 20 inches; clay loam
- Bt2—20 to 28 inches; clay loam
- Bt3—28 to 38 inches; gravelly clay
- Bt4—38 to 52 inches; gravelly clay

Bt5—52 to 67 inches; gravelly clay
Bt6—67 to 84 inches; gravelly clay

Minor Components in Map Unit 963

Surnuf soils with a subsoil of silty clay and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains
Hydric soil status: Not hydric

Sites loam and similar soils
Composition: 5 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metasedimentary mountains
Hydric soil status: Not hydric

Soils that have a skeletal subsoil
Composition: 3 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains
Hydric soil status: Not hydric

At an elevation of less than 2,800 feet, Surnuf soils on north-facing slopes and similar soils
Composition: 2 percent
Slope: 30 to 50 percent
Geomorphic position: Side slopes on metavolcanic and intrusive igneous mountains
Hydric soil status: Not hydric

990—Riverwash, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

General location: Sacramento and Feather River channels
Major uses: Wildlife habitat and watershed
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 75 to 170 feet (23 to 52 meters)
Mean annual precipitation: 21 to 23 inches (533 to 584 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 245 days

Map Unit Composition

Riverwash, frequently flooded—100 percent

Characteristics of Riverwash, Frequently Flooded

Slope: 0 to 2 percent
Geomorphic position: Gravel bars in river channels
Kind of material: Sandy and gravelly alluvium derived from igneous and metamorphic rocks
Surface runoff (bare conditions): Negligible
Altered hydrology: Flood-control structures have altered the natural frequency, duration, and periods of flooding.

Definition: Riverwash consists of unstable, recent alluvial deposits of stratified, sandy and gravelly sediments. It is flooded and reworked frequently by rivers.

991—Xerofluvents, 0 to 4 percent slopes, frequently flooded

Map Unit Setting

General location: Northwestern Butte County
Major uses: Wildlife habitat, watershed, and livestock grazing
Major land resource areas: 17 and 18
Landscape: Sacramento Valley and Southern Cascade foothills
Elevation: 140 to 4,435 feet (44 to 1,353 meters)
Mean annual precipitation: 23 to 70 inches (584 to 1,778 millimeters)
Mean annual air temperature: 50 to 63 degrees F (10 to 17 degrees C)
Frost-free period: 110 to 260 days

Map Unit Composition

Xerofluvents sandy loam, frequently flooded—75 percent
Minor components—25 percent

Characteristics of Xerofluvents Sandy Loam, Frequently Flooded

Slope: 0 to 4 percent
Geomorphic position: Bars and channels on flood plains
Parent material: Stratified, sandy and gravelly alluvium derived from igneous, metamorphic, and sedimentary rocks
Observed vegetation: California sycamore, white alder, Fremont cottonwood, valley oak, willows, foothill pine, California laurel, and Douglas sagewort
Surface feature: Bar-and-channel topography
Texture of the surface layer: Sandy loam
Percentage of the surface covered by rock fragments: 0 to 75 percent medium, rounded gravel, 0 to 40 percent rounded cobbles, 0 to 5 percent rounded stones
Restrictive feature: None identified
Shrink-swell potential: Low (LEP of less than 3)

Hydrologic properties (based on typical depth to a restrictive feature or 60 inches)
- *Annual flooding frequency:* Frequent
- *Annual ponding frequency:* None
- *Depth to a water table (zone of saturation):* 28 to 80 inches
- *Available water capacity:* Moderate (about 5.7 inches)
- *Natural drainage class:* Somewhat poorly drained
- *Surface runoff (bare conditions):* Negligible

Interpretive groups
- *Land capability, irrigated:* 6w-2
- *Land capability, nonirrigated:* 6w-2
- *Storie index:* 0 (revised)
- *Hydric soil status:* Not hydric
- *Hydrologic soil group:* A

Typical profile

A—0 to 6 inches; sandy loam
C1—6 to 14 inches; sandy loam
C2—14 to 26 inches; sandy loam
C3—26 to 37 inches; sandy loam
Ab—37 to 43 inches; sandy loam
C4—43 to 47 inches; loamy sand
C5—47 to 54 inches; sandy loam
C6—54 to 72 inches; loamy sand
C7—72 to 80 inches; sandy loam

Minor Components in Map Unit 991

Xerofluvents, frequently flooded for long periods, and similar soils
Composition: 13 percent
Slope: 0 to 4 percent
Geomorphic position: Channels on flood plains
Hydric soil status: Hydric

Charger fine sandy loam and similar soils
Composition: 6 percent
Slope: 0 to 4 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Vina fine sandy loam and similar soils
Composition: 3 percent
Slope: 0 to 4 percent
Geomorphic position: Alluvial fans
Hydric soil status: Not hydric

Xerofluvents with bedrock at a depth of less than 60 inches and similar soils
Composition: 3 percent
Slope: 0 to 4 percent
Geomorphic position: Bars and channels on flood plains
Hydric soil status: Not hydric

995—Pits, gravel

Map Unit Setting

General location: Western Butte County
Major uses: Source of aggregate and wildlife habitat
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 130 to 295 feet (40 to 91 meters)
Mean annual precipitation: 22 to 26 inches (559 to 660 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 days

Map Unit Composition

Pits, gravel—100 percent

Characteristics of Pits, Gravel

Geomorphic position: Flood plains and fan terraces
Kind of material: Sandy and gravelly alluvium derived from igneous and metamorphic rocks
Definition: Gravel pits consist of open excavations from which soil has been removed. The underlying exposed deposits of sand and gravel are excavated and removed.

996—Dumps, excavated material

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat and source of fill aggregate
Major land resource area: 17
Landscape: Sacramento Valley
Elevation: 130 to 295 feet (40 to 91 meters)
Mean annual precipitation: 22 to 26 inches (559 to 660 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 days

Map Unit Composition

Dumps, excavated material—100 percent

Characteristics of Dumps, Excavated Material

Geomorphic position: Intermediate terraces
Definition: Dumps, excavated material, occur as areas of smooth or uneven accumulations or piles of stockpiled waste rock excavated during construction of the Thermalito Power Canal.

997—Pits

Map Unit Setting

General location: Central Butte County
Major uses: Wildlife habitat and recreation
Major land resource area: 17
Landscape: Sacramento Valley and Northern Sierra Nevada foothills
Elevation: 130 to 1,650 feet (40 to 503 meters)
Mean annual precipitation: 22 to 35 inches (559 to 889 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 250 to 260 days

Map Unit Composition

Pits—95 percent
Minor components—5 percent

Characteristics of Pits

Slope: 0 to 200 percent
Geomorphic position: Metamorphic and sedimentary hills and intermediate terraces
Definition: Pits consist of open excavations from which soil and, commonly, the

underlying material have been removed, exposing rock or other material. The remaining areas are associated with construction of the Oroville Dam, the Thermalito Power Canal, the Oroville Diversion Dam, and the fish barrier dam in the Oroville area and with mining at the Cherokee Gold Mine.

Minor Components in Map Unit 997

Rock outcrop
Composition: 3 percent
Slope: 0 to 200 percent
Geomorphic position: Metavolcanic hills

Cliffs
Composition: 2 percent
Slope: 150 to 200 percent
Geomorphic position: Terraces

998—Dumps, landfill

Map Unit Setting

General location: Central Butte County
Major use: Garbage disposal
Major land resource area: 18
Landscape: Southern Cascade foothills
Elevation: 225 to 415 feet (70 to 128 meters)
Mean annual precipitation: 26 inches (660 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 250 days

Map Unit Composition

Dumps, landfill—100 percent

Characteristics of Dumps, Landfill

Geomorphic position: The top and side slope of volcanic ridges
Definition: Dumps, landfill, occur as smoothed or uneven accumulations or piles of general refuse and the associated adjoining areas where soil has been removed for landfill cover.

999—Water

Map Unit Setting

Major land resource areas: 17, 18, 22A, and 22B

Map Unit Composition

Water—100 percent

Characteristics of Water

Definition: A perennial water body that includes streams, rivers, lakes, and ponds. Pits and reservoirs that contain water also are mapped as water. The water polygons are delineated according to the aerial imagery used during compilation of maps, as water coverage may fluctuate throughout and among years. Water bodies that are too small or narrow are not delineated.

DAM—Dam

Map Unit Composition

Dam, manmade—100 percent

Characteristics of Dam, Manmade

Definition: A constructed barrier, together with any associated spillways and appurtenant works, across a watercourse or natural drainage area. It permanently impounds and stores water, traps sediment, and controls floodwater.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of gravel, sand, reclamation material, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate

gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961).

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that erosion is the main hazard affecting the use of the soils. The letter *w* shows that excess water is the main limitation affecting the use of the soils. Poor soil drainage, wetness, a high water table, ponding, and overflow are the factors that affect the soils in this subclass. The letter *s* shows that the soil is shallow or has other limitations within the root zone, such as rock fragments, limited available water capacity, low fertility that is difficult to correct, and salinity or sodium content. The letter *c* shows that the climate is the major limitation affecting the soils.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. Class 8 does not include subclasses.

Capability units are soil groups within a subclass. The soils in a capability unit have similar potentials and limitations and require similar management. Capability units are

generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6.

Table 5 lists the capability classification of the soils and miscellaneous areas in this survey area. This information is also provided in the section “Detailed Soil Map Units.”

Major Land Resource Areas

Prepared by Jennifer Anderson, Soil Scientist, Natural Resources Conservation Service, Chico, California.

A major land resource area (MLRA) is a broad geographic area that has a distinct combination of climate, topography, vegetation, land use, and general type of farming (USDA, 2006). Parts of four of these nationally designated areas are in this survey area. These areas and their numbers are Sacramento and San Joaquin Valleys, MLRA 17; Sierra Nevada Foothills, MLRA 18; Sierra Nevada Mountains, MLRA 22A; and Southern Cascade Mountains, MLRA 22B. The major land resource area number is given in the detailed soil map unit descriptions.

MLRA 17, Sacramento and San Joaquin Valleys.—About one-third of the survey area is included in MLRA 17. Locally referred to as the Central Valley, this area includes the Sacramento and San Joaquin Rivers and is characterized by the influence of alluvial processes, including sediment transport, deposition, sorting, and development. These processes have created distinct landforms that guide land use. For instance, the processes formed the valley basins adjacent to the rivers, fans, and flood plains around tributary streams and the terraces and foothills around the valley edges.

The deepest, oldest sediments in the Central Valley came from the early Sierra Nevada volcanoes and were deposited in a marine environment. More recent sediments that were deposited in a nonmarine environment came from the Sierra Nevada Batholith granites, which were exposed upon weathering of the volcanoes. Most of this major land resource area’s surface has been covered by recent alluvial sediments, which exhibit various patterns of sediment deposition. The finer grained sediments occur in connection with flood plains, lakes, and basins; the coarser grained sands and gravel occur in connection with alluvial fans and stream channels; and gravelly stream terrace remnants occur along the edges of valleys.

Elevation ranges from sea level to 660 feet (200 meters) above sea level. The average annual precipitation is 12 to 30 inches (305 to 760 mm) in most of the Sacramento Valley, reaching 40 inches (1,015 mm) at the higher edges of the valley’s north end. The average annual precipitation in the San Joaquin Valley ranges from 5 to 12 inches (125 to 305 mm). The average annual temperature in this MLRA is 59 to 67 degrees F (15 to 20 degrees C), and the average annual freeze-free period is 325 days.

Because of low rainfall and low streamflow, water is scarce in many parts of this area. Irrigation for crops is obtained through stream diversions, wells, and canals of irrigation districts, which obtain their water from State and Federal water systems. The Sacramento and Feather Rivers supply most of the water used in the area.

Vegetation includes naturalized annuals and wild grains, scattered oaks on terraces, and oak, willow, and cottonwood along rivers and streams. Parts of the area are very important for wintering waterfowl and seasonally neotropical migrants.

About 58 percent of the land in this area is used for crops, mainly cotton, nuts, grapes, grains, hay, pasture, rice, alfalfa, citrus, and tomatoes in irrigated areas. The acreage used for urban development is increasing.

MLRA 18, Sierra Nevada Foothills.—About one-third of the survey area is included in MLRA 18. This MLRA is at the toe of the gentle east-west slope on the west side of the Sierra Nevada Mountains. The area consists of rolling to steep, dissected hills and low mountains. The northernmost part of the area is underlain dominantly by

pyroclastic rocks and volcanic mudflow of the Tuscan Formation, which formed from eruptions of volcanoes in the Cascade Range. To the south, metamorphosed marine sedimentary and volcanic rocks underlie this area; granites of the Sierra Nevada Batholith underlie the foothills around Merced and southward.

Elevation generally ranges from 660 to 1,650 feet (200 to 505 meters) but can be as much as 3,950 feet (1,205 meters) on isolated peaks. The average annual precipitation is 18 to 45 inches (455 to 1,145 millimeters), and the average annual temperature is 47 to 67 degrees F (8 to 20 degrees C). The average annual freeze-free period is 275 days.

Surface water in this area is generally of very high quality, requiring little or no treatment before use. Ground water supplies are small and mostly untapped. Vegetation includes naturalized annual grasses, shrubs, and trees. Grassland species consist dominantly of soft chess, wild oats, filaree, burclover, ripgut brome, and foxtail fescue. Scrub live oak, blue oak, and foothill pine occur as individual trees or in stands. Chamise and manzanita dominate areas of brushland, and ponderosa pine, manzanita, and black oak occur at the higher elevations.

More 60 percent of this area is grassland used mainly as rangeland for livestock production. A significant acreage of the area is brushland or openland hardwood forest, and only a small acreage is used as cropland.

MLRA 22A, Sierra Nevada Mountains.—About a one-sixth of the survey area is included in MLRA 22A. The higher elevations of the asymmetrical Sierra Nevada Mountains, with their steep eastern escarpment and gently sloping western slopes, make up this major land resource area. This area is characterized by hilly to steep mountain relief and mountain valleys, dominantly shaped by glaciers. The fingerprints of the glacial history in this area includes U-shaped valleys, scoured-out cirques, glacial till, and intermontane valleys filled with coarse grained alluvial deposits. Volcanic activity of minor extent produced lava flows in this area.

Elevation generally ranges from 1,500 to 9,000 feet (455 to 2,745 meters); some peaks exceed 12,000 feet (3,660 meters). The average annual precipitation is 40 to 80 inches (1,015 to 2,030 millimeters) in this area, with extremes of 6 inches (150 millimeters) in the foothills and lower valleys and as much as 100 inches (2,540 millimeters) on mountain peaks. Much of the winter precipitation occurs as snow. The average annual temperature is 25 to 63 degrees F (-4 to 17 degrees C), and the average annual freeze-free period is 205 days.

The abundant rainfall and snowfields on the higher mountain slopes supply the water needed to support forest and rangeland and help to meet the water needs of the lower areas by contributing to many perennial rivers. The main coniferous forest vegetation in this area is ponderosa pine, Douglas-fir, incense cedar, sugar pine, white fir, California red fir, Jeffrey pine, lodgepole pine, and mountain hemlock. Understory species in open stands include manzanita, sagebrush, blue wildrye, and bluegrasses. About three-fourths of this area is federally owned and is in national parks and forests. The rest consists of privately owned ranches, farms, and forestland. About 83 percent of the area is forestland and is used for recreation, wildlife habitat, timber production, and watershed. Less than 10 percent of the area is used as rangeland, and very little of the area is cropland.

MLRA 22B, Southern Cascade Mountains.—About one-sixth of the survey area is included in MLRA 22B. This MLRA covers the southernmost area of the north- to south-trending Cascade Mountain Range. It is made up primarily of volcanics, which are exposed as peaks and volcanic uplands. It is surrounded by cinder cones, shield volcanoes, and composite volcanoes. Well known peaks and recently active volcanoes in this area include Medicine Lake Volcano, Mount Lassen, and Mount Shasta. Alluvial, lacustrine, and fluvial deposits have collected in the depressions on lava flows, between lava flows, and in stream valleys and basins.

The average annual precipitation is 15 to 80 inches (380 to 2,030 millimeters). It occurs mainly as snow. The average annual temperature is 33 to 62 degrees F (1 to 17 degrees C), and average annual freeze-free period is 215 days.

The abundant rainfall and snowfields on the higher mountain slopes supply the water needed to support forest and rangeland and help to meet the water needs of lower areas by contributing to perennial streams. The surface water in this area is of high quality. The use of ground water is minimal.

Three main types of vegetation occur in this area. These are low-elevation mixed conifer forests consisting of ponderosa pine, incense cedar, and California black oak; higher elevation conifer forests consisting of white fir, sugar pine, ponderosa pine, incense cedar, Douglas-fir, California black oak, and Oregon white oak on the western slopes and Jeffrey pine and ponderosa pine on the eastern slopes; and at the higher elevations, upper montane forests consisting of red fir and lodgepole pine. Meadows occur throughout the forested areas.

Federally owned land occurring mainly as national forests makes up more than half of this area. The remaining land consists of privately owned ranches, farms, and forestland. About 72 percent of the area consists of forests, which are used for wildlife habitat, recreation, timber production, and watershed, and about 17 percent is rangeland. Only about 2 percent of the area is used as cropland.

Prime Farmland and Other Important Farmlands

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

About 240,800 acres in the survey area, or nearly 26 percent of the total acreage, meets the criteria for prime farmland. Most of the acreage designated as prime farmland is used to produce rice, almonds, walnuts, and dried plums.

The map units in the survey area that are considered prime farmland are listed in table 6. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

In some areas, land that does not meet the criteria for prime farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

About 56,000 acres in the survey area, or about 6 percent of the total acreage, meets the criteria for farmland of statewide importance. Most of this acreage is used to produce grain, pasture, hay, orchard crops, or grapes.

The map units in the survey area that are considered farmland of statewide importance are listed in table 7. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

The extent of the map units that are considered prime farmland or farmland of statewide importance is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading “Detailed Soil Map Units.”

Storie Index

Prepared by Anthony “Toby” O’Geen, Ph.D., Soils Extension Specialist, University of California, Davis, and Susan Southard, Soil Scientist, Natural Resources Conservation Service.

The Storie index is a widely known and accepted method of rating soils for land use and productivity in California (Storie, 1978). Ratings are generated from a broad range of soil profile and landscape characteristics. The Storie index of the soils in this survey area is shown in table 8 and in the descriptions of the detailed soil map units. Historically, Storie index ratings have been “hand generated” by soil survey staff and collaborators. These ratings can be highly subjective because no single person has generated them for the entire State and because there are inherent biases associated with the classification system. To reduce this subjectivity, a revised Storie index is used in the National Soils Information System (NASIS) to compute the ratings.

The model uses combinations of discrete and fuzzy logic functions (Cox, 1999) to obtain scores for the factors associated with the Storie index. If the modeled criteria in NASIS are used, subjectivity can be minimized and ratings can be generated in a timely and consistent manner.

The Storie index assesses the productivity of a soil on the basis of four factors. These are factor A, the degree of soil profile development; factor B, texture of the surface horizon; factor C, slope; and factor X, manageable features, including drainage, microrelief, fertility, acidity, erosion, and salt content. A score ranging from 0 to 100 percent is determined for each factor, and the scores are then multiplied together to derive an index rating (Storie, 1933, 1978). For map units with more than

one major component, the Storie index can be a weighted average based on the percentages of the soil components in the unit, the rating can be based solely on the major soil component, or it can be the best rating in the map unit.

For *factor A*, the degree of soil development is used to assess potential productivity. For alluvial soils, the score is progressively decreased with increasing degree of soil development and/or the presence of root-restrictive layers. Deep, well drained alluvial soils would be rated 100, whereas a similar soil with a restrictive horizon, such as a claypan or hardpan, would be rated much lower. For soils that formed in material weathered from bedrock, scoring is based on depth to lithic or paralithic contact.

Two main data sets in NASIS are used to model factor A, soil taxonomy and landform. Interpretive criteria implied in the Storie Profile Group (factor A) relied on the current taxonomic placement (Soil Survey Staff, 1999) of the soil in NASIS. In all situations, the upper limit of the scoring range was used for each soil profile group. For example, an Entisol that formed on the valley floor would be rated 100, whereas a Durixeralf that is on an old terrace and is less than 1 foot deep to a pan would receive a rating of 80. For depth to a restrictive layer, the fuzzy logic rule "more is better" was used to revise the upper limit of the score.

Factor B is based on texture of the surface horizon. Loamy soils receive the highest ratings, and clay-rich and sandy soils receive lower ratings. The scores are modified by the content of rock fragments. They range from 100 to 10 percent.

Crisp values were assigned for surface horizon textural classes according to Storie (1978). The following textures were not listed in the original Storie index publication and were added and assigned ratings by the authors: silty clay, clay, coarse sand, very fine sandy loam, sandy clay, loamy coarse sand, loamy fine sand, loamy very fine sand, and silt. At the present time, the NASIS Storie model does not rate in-lieu-of-textures because they were not addressed in the original Storie index. The content of rock fragments modified textural class ratings according to the fuzzy logic rule "less is better." The fuzzy score for content of rock fragments was used to weight the surface soil textural class score for factor B. For example, a silt loam with 0 percent rock fragments received a score of 100, while a very gravelly silt loam with 45 percent rock fragments received a score weighted proportionally to the content of rock fragments.

Factor C is based on steepness of slope. Scores are 100 to 85 percent if slopes are nearly level or gently sloping (0 to 8 percent), 95 to 70 percent if slopes are moderately sloping or strongly sloping (9 to 30 percent), and 50 to 5 percent if slopes are steep (more than 30 percent).

When slope classes stored in NASIS were scored, the fuzzy logic rule "less is better" was used. This function reduced the subjectivity associated with choosing a score from the range of scores within each factor. For example, the original Storie factor C (slope) has slope categories with scores that range from 100 for nearly level to 5 for very steep (Storie, 1978).

Factor X focuses on soil and landscape characteristics, exclusive of the soil profile, that require special management. The characteristics considered are fertility, drainage, erosion, acidity, salt content, and microrelief.

Data elements stored in NASIS, such as drainage class, erosion class, microrelief, flooding, and ponding, were used to model the hydrologic and physical properties associated with the X factor. Toxic thresholds were established for electrical conductivity, sodium adsorption ratio, and pH to define adverse chemical properties used for the X factor. Optimum soil pH was used to characterize fertility. Fuzzy rule sets were implemented in NASIS to model chemical and fertility attributes associated with the X factor. A "less is better" curve was used to score erosion and salt content. Crisp values were assigned to hydrologic properties.

Named components in map units are assigned grades according to their suitability for general intensive agriculture as shown by their Storie index ratings. The six grades and their range in index ratings are:

Grade 1—80 to 100
Grade 2—60 to 79
Grade 3—40 to 59
Grade 4—20 to 39
Grade 5—10 to 19
Grade 6—less than 10

Grade 1 soils are well suited to intensively grown irrigated crops that are climatically adapted to the region.

Grade 2 soils are good agricultural soils, although they are not so desirable as soils in grade 1 because of a less permeable subsoil, deep cemented layers (e.g., duripans), a gravelly or moderately fine textured surface layer, moderate or strong slopes, restricted drainage, a low available water capacity, lower soil fertility, or a slight or moderate hazard of flooding.

Grade 3 soils are only fairly well suited to agriculture because of moderate soil depth; moderate to steep slopes; restricted permeability in the subsoil; a clayey, sandy, or gravelly surface layer; somewhat restricted drainage; acidity; low fertility; or a hazard of flooding.

Grade 4 soils are poorly suited. They are more limited in their agricultural potential than the soils in grade 3 because of such restrictions as a shallower depth; steeper slopes; poorer drainage; a less permeable subsoil; a gravelly, sandy, or clayey surface layer; channeled or hummocky microrelief; or acidity.

Grade 5 soils are very poorly suited to agriculture and are seldom cultivated. They are more commonly used as pasture, rangeland, or woodland.

Grade 6 soils and miscellaneous areas are not suited to agriculture because of very severe or extreme limitations. They are better suited to limited use as rangeland, protective habitat, woodland, or watershed.

Important note: This interpretation was not designed to be used in a regulatory manner.

Hydric Soils

Table 9 lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2003) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 2002).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
   B. are poorly drained or very poorly drained and have either:
      1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
      2) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
      3) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

Forestland Productivity and Management

The tables described in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of

forestland management. Only the soils that have the potential to produce wood crops are listed.

Forestland Productivity

In table 10, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. *Site index base,* given as a number, refers to the site index curve used to determine the productivity. The site index bases used are from the National Register of Site Index Curves. They are as follows: 30—Schumacher, 1926; 50—Schumacher, 1928; 600—Meyer, 1938; 605—Dunning, 1942; and 790—McArdle, Meyer, and Bruce, 1961. More detailed information about site index and site index bases is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *annual production*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Forestland Management

In the tables described in this section, interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified aspect of forestland management. *Well suited* indicates that the soil has features that are favorable for the specified management aspect and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified management aspect. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified management aspect. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified management aspect or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low, moderate,* and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the

"National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

Table 11a

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Table 11b

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Table 11c

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Table 11d

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A

rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Characteristic Vegetation

In areas that have similar climate and topography, differences in the kind and amount of forestland vegetation are closely related to the kind of soil. Effective management is based on the relationships among soils, vegetation, and climate.

Management of vegetation requires knowledge of the kinds of soils and the potential natural plant communities on those soils. It also requires an evaluation of the present and desired condition trends for a given management area. The quantity and quality of understory vegetation in forests vary with the kind of soil, the age and kind of trees in the canopy, the density of the canopy, and the thickness and stage of decomposition of the litter. The density of the canopy determines the amount of light that understory plants receive.

Table 12 shows, for each soil that supports vegetation suitable for cropland, wildlife habitat, livestock grazing, or timber management, the commonly observed characteristic overstory and understory vegetation. Relative abundance as percent cover is shown for soils that are managed for timber production. The table provides information about vegetative relationships for specific soils. Data were collected following standard methods for areas that are managed for timber production. For all other areas, data are given for the commonly observed plants only.

Overstory vegetation more than 15 feet in height refers to the trees and shrubs that make up the canopy cover portion of the observed natural plant community on each soil. The common name and plant symbol are listed. The *percent cover by species* is the abundance, as a representative percentage of the total canopy cover, for each species that makes up the overstory portion of the characteristic vegetation. In agricultural areas, only the commonly occurring species are shown.

Understory vegetation less than 15 feet in height refers to the grasses, forbs, shrubs, and seedling trees that make up the understory portion of the observed natural plant community. The common name and plant symbol are listed. The *percent cover by species* is the abundance, as a representative percentage of the total understory, for each species that makes up the understory portion of the characteristic vegetation. If there is no associated canopy cover, the commonly observed plants are listed in the understory vegetation column.

Table 13 provides an index of the characteristic vegetation (common plant name, scientific plant name, and plant symbol) arranged in order by common plant name. Table 14 provides the same information arranged in order by plant symbol.

Wildlife Habitat

Prepared by Joseph G. Silveira, Wildlife Biologist, U.S. Fish and Wildlife Service, Sacramento National Wildlife Refuge Complex, Willows, California.

This survey area is characterized by a diversity of landforms, geology, soils, topography, hydrology, and climates, which result in various forms of vegetation (in areas of grassland, woodland, scrubland, chaparral, and mixed hardwood and

coniferous forests) and a rich diversity of natural plant communities and wildlife habitats. The flood plains along the Sacramento and Feather Rivers, Butte Basin, alluvial fans and terraces in the northern Sacramento Valley, and the Southern Cascade and Northern Sierra Nevada foothills and mountains are covered with a rich mosaic of vegetation and are dissected by streams, which provide water, food, cover, and breeding, migration, and wintering habitats for native fish, amphibians, reptiles, birds, and mammals.

Wildlife habitat is related to the soil landscape. The traditional definition of wildlife focused on birds (particularly waterfowl) and big game and fur-bearing animals, largely ignoring other vertebrate animals (fish, amphibians, reptiles, songbirds, and small mammals). Wildlife habitat was viewed in the context of wetlands, uplands, rangelands, and forests. The term "wildlife," however, implies all free-living organisms (Robinson and Bolen, 1989), including vertebrate and invertebrate fauna (animals) and flora (plants) living in both natural and managed wild lands.

The term "biodiversity" refers to living organisms (biota), their populations and assemblages (communities), while "natural diversity" refers to indigenous biota and the biological and geophysical processes (ecosystem) that sustain them. California wildlife habitats are described by specific vegetation or plant communities in the Wildlife Habitat Relationship Program (Mayer and Laudenslayer, 1988). Other classification systems are used specifically for vegetation, such as the current manual (Sawyer and Keeler-Wolf, 1995), which is under revision, and the former system (Holland, 1986), which is highly useful for describing valley and foothill habitats and understanding geophysical process, which affect vegetation patterns on the land. Other sources describe California vegetation in greater detail (Major and Barbour, 1988); exemplify its spectacular diversity (Faber, 1997); explore human impacts on the vegetation, landscape, and wildlife (Barbour and others, 1993; Thlander, 1994); and describe threats to, and opportunities for sustaining, California's biodiversity (California Department of Fish and Game, 2003). In a simplified, compact handbook, Storer and Usinger (1963) illustrate and describe a surprising amount of the biodiversity in Butte County.

Soil science is a key component of landscape ecology and must be considered for wildlife habitat restoration and management where the goal is to increase and sustain biodiversity. Landscape ecology is a sub-discipline of ecology that focuses on spatial and temporal variation through study of the relationships of physical elements and processes to patterns of energy flow, wildlife, and plant populations and communities (Forman and Gordon, 1986). This emerging science integrates climatology, hydrology, geology, geomorphology, soil science, vegetation and wildlife science, economics, sociology, law, engineering, and land use planning to conserve, enhance, restore, and protect the ecosystems on the land. Landscape ecology encompasses natural and human-influenced physical and biological features (patterns) and processes that shape the environment (U.S. Fish and Wildlife Service, 2005).

Over time (millions of years), the natural patterns of climate, hydrology, geology, soils, vegetation, and wildlife resulted in a rich natural diversity. Human cultural practices associated with modern civilization have drastically reduced the wildlife population and the extent of wildlife habitat and have greatly altered natural ecosystem processes, resulting in declining biodiversity. Presently, habitat loss (through agricultural and urban land use conversions) and invasive species continue to decrease the quantity and quality of wildlife habitat. Wildlife habitat restoration and management aim to restore and sustain certain levels of biodiversity.

Conservation and management of natural biodiversity involve maintaining environmental health and ecosystem stability. They increase the extent of native species (especially those indigenous to a particular site), endemic species (those that are known to occur only on a particular site), and rare, threatened, and endangered

species. Also, they decrease the extent of invasive species, which are a threat to natural diversity.

Use of local ecotypes for projects that enhance and restore wildlife habitat helps to maintain or increase natural diversity at a genetic level and helps to ensure restoration success because local ecotypes are adapted to local geophysical conditions. An ecotype is a population or group of populations of a particular species that is distinguished by unique morphological and/or physiological characteristics, infertile with other ecotypes and usually prevented from interbreeding with other ecotypes by ecological barriers (Barbour and others, 1987).

Rare species and species listed by the Federal Government and California as threatened and endangered occur throughout Butte County. State and federal laws pertain to certain land use practices that may impact endangered species. Migratory birds, such as waterfowl, shore birds, sandhill cranes, raptors, doves, and songbirds, and anadromous fish, such as sturgeon, Chinook salmon, and steelhead, move across State and national boundaries and are protected by Federal laws and policies enforced by the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration. Resident species, such as quail, grouse, pheasant, wild turkey, rabbits, squirrels, black bear, mountain lion, wild pig, and deer, are protected by State laws and policies enforced by the California Department of Fish and Game. Lists of the wildlife in Butte County, including rare, threatened, and endangered species, are available from the California Department of Fish and Game and the U.S. Fish and Wildlife Service. Rare plants and plant conservation issues in California are well documented through a database-driven program (California Native Plant Society, 2001).

Social values affecting the conservation and management of natural diversity include recreation and education, which involve access to public lands and/or private clubs. Recreation involves wildlife-dependent activities, such as wildlife observation and photography, environmental education and interpretation, hunting and fishing, and hiking and camping (U.S. Fish and Wildlife Service, 2005). Butte County has many areas that offer opportunities for wildlife-dependent recreation and preservation of wildlife, including the Sacramento River National Wildlife Refuge, the Sacramento River Wildlife Area, Bidwell-Sacramento River State Park, the North Central Valley Wildlife Management Area (Llano Seco Unit), the Upper Butte Basin Wildlife Area, the Grey Lodge Wildlife Area, the Feather River Wildlife Area, the North Table Mountain Wildlife Area, the Coon Hollow Wildlife Area, the Big Chico Creek Ecological Preserve, the Butte Creek Canyon Ecological Preserve, the Butte Creek House Ecological Preserve, the Bechtel Stone Ridge Ranch Ecological Preserve, the Arroyo Chico Bidwell Ranch Preserve, Bidwell Park, Oroville Dam, the Plumas National Forest, and the Lassen National Forest. Increasing the quality and quantity of wildlife habitat can increase the opportunities for recreation and education and improve outdoor experiences related to public and private wildlife use.

Elements of wildlife habitat include water, food, and cover for rest, thermal regulation, and reproduction. Wildlife cover occurs in open environments, such as wetlands and grasslands and savannas (rangelands). It also occurs in open- to closed-canopy riparian and oak woodlands, hardwood-conifer and mixed conifer forests, and areas of chaparral. Food sources provide high-energy seeds and fruits and protein-rich grasses, legumes, herbaceous forbs, and leaves from woody plants. Wildlife species are selective throughout the year, reflecting their annual behavioral and physiological-energetic cycle (Raveling, 1979; Silveira, 1998; Taber and Dasmann, 1958). Herbaceous annual and perennial grasses and forbs, such as soft chess, annual ryegrass, wild oats, filaree, asters, mustards, lupines, and clovers (legumes), provide seeds for food and foliage for food and cover. Domestic crop grains, such as rice and wheat, also provide seeds and foliage for food and cover. Irrigated and dry pasture provides grasses and legumes. Trees and shrubs provide bark, branches, twigs, and foliage for food and cover and fruits, such as berries, acorns, and catkins,

for food. Coniferous plants provide cones for food and woody and green structure for cover. Soil properties affect plant growth and vigor and the distribution and patterns of vegetation; therefore, soils influence the nutritional and structural value of wildlife habitat.

Wetlands increase the diversity of wildlife habitat. They occur throughout Butte County as major riparian, marsh, and meadow habitat types or as spatial and/or temporal inclusions in the larger areas of other habitat types. There are a great variety of types of natural wetlands and species of wetland plants. Wetland plants are completely aquatic (submerged), partially aquatic (emergent, shoreline), or completely terrestrial. Wetlands consist of riparian (stream-side) flood plains, saturated meadows, shallow water intermittent pools and streams, and relatively permanent lakes. Intermittent wetlands form with cool-season rains in the valley and foothills and with rain and snowmelt in the mountains. Intermittent wetlands, such as vernal pools, are extremely productive and important for migratory birds and endangered species (Silveira, 1998). Besides wildlife habitat, wetlands provide temporary flood storage and improve water quality by filtering sediments. Wetland impoundments are constructed when depressions and channels are cut and levees, dams, and canals are built to hold and convey the water necessary to restore and manage habitat for waterfowl and other wildlife. Federal and State laws and policies apply to wetland construction and drainage. The U.S. Army Corp of Engineers and the California Department of Water Resources are enforcement agencies.

Soils are of fundamental importance to the conservation and management of wildlife habitat and must be considered before habitat restoration projects are implemented (Silveira and others, 2003). Riparian forests, freshwater wetlands, grasslands, woodlands, and forests occur in patterns that reflect geophysical features, such as geology, landforms, soils, topography, slope, surface and subsurface hydrology, and climate, as influenced by latitude and elevation. Soil properties, such as texture, depth to bedrock, a duripan, or gravel (restrictive layers), and chemistry, along with the landscape features (topography and slope), affect the growth and vigor of the plant species used by wildlife. Soils also affect the potential for habitat restoration and management.

Plant-soil relationships determine which species are adapted to specific site characteristics and conditions, ultimately determining vegetation and wildlife use (Silveira and others, 2003). It is important to restore and manage desirable wildlife habitat plants on suitable sites, that is, the sites to which the species are adapted. Invasive plant species, which decrease the quality and quantity of habitat, become extremely prolific and vigorous (weedy) in areas of highly productive, deep, well drained soils and less weedy in areas of saline-sodic, alkaline-acidic, and shallow soils. Therefore, soil properties affect the intensity of the vegetation management necessary to enhance and maintain wildlife habitat. Vegetation management, which includes grazing, burning, mowing, disking, applications of herbicide, and removal of invasive nonnative trees and shrubs, enhances and maintains wildlife habitat by directing plant succession to earlier, vigorous stages; improving the structure of wildlife cover; increasing plant digestibility and nutritional values; and decreasing the extent of undesirable weeds and invasive plants (Marty, 2005; Silveira, 1998).

Federal and State grants for wildlife habitat restoration projects on private and public lands are available through the U.S. Department of Agriculture, the U.S. Fish and Wildlife Service, the U.S. Bureau of Reclamation, the National Oceanic and Atmospheric Administration, the California Wildlife Conservation Board, and private organizations and foundations.

The relationship of landforms and soils to vegetation and wildlife habitat appears complex, but it can be comprehended with relative ease in obvious landscape patterns. Comparing the soil groups in this survey with those identified on the map in the “Reconnoissance Soil Survey of the Sacramento Valley, California” (USDA, 1915)

illustrates the enduring nature of these patterns. Soils develop in patterns across landforms (Smith and Verrill, 1998); plants grow in patterns strongly linked with soil groups and map units.

Plant-soil relationships affect the distribution and patterns of vegetation (Holland and Dains, 1990). Soil texture and profile development as they relate to the root zone of plants, depth to restrictive layers as it relates to root penetration and growth, the availability of water, and chemistry (salinity and sodicity and alkalinity and acidity) affect plant germination, plant growth and vigor, and ultimately the species that can survive in these edaphic (soil) conditions. The root zone is affected by the water-holding capacity, wetness, and permeability of the soils. Geology, landforms, soils, topographic features (such as depressions, swales, and slope), hydrology, and climate, as influenced by latitude, elevation, and slope aspect (which affects precipitation, minimum and maximum temperatures, cumulative heat days, frost days, and the snow line) affect the distribution of plant species, giving rise to various plant assemblages (plant communities), which are characterized by their plant species composition, frequency, density, and cover. The Butte County flora consists of more than 125 families, 676 genera, 1,890 species, and 133 varieties and subspecies, for a total of 2,023 plant taxa, which includes 458 non-natives and 77 plants listed by the California Native Plant Society as rare, threatened, or endangered in California and elsewhere (Oswald and Ahart, 1994). This flora occurs in 15 vegetation types described as California wildlife habitats (Mayer and Laudenslayer, 1988).

Charts A, B, and C and appendices A and B illustrate the relationship between the soils and wildlife habitats in the survey area. Following is a description of wildlife habitats (including selected wildlife species) within the context of soil-landscape groups from the survey. Refer to Major and Barbour (1988) for detailed descriptions of the vegetation.

Flood Plains Along the Sacramento and Feather Rivers

Valley and Foothill Riparian, Freshwater Marsh, Valley Oak Woodland, Annual Grassland, and walnut and almond orchards characterize the flood plains along the rivers in Butte County. In the Sacramento River meander belt portion of the flood plain, soils are young, coarse textured, very deep, and freely drained. In the meander belt, plant germination and growth and vegetation patterns are strongly affected by frequent overbank flooding, which results in scouring, erosion, and deposition. The flooding creates azonal layers of periodically reworked gravel, sand, and silt (mixed alluvium). While this portion of the flood plain is used for orchards, fragments of Valley Riparian Forest remain. This forest once dominated the area. River meander does not rework the stable portion of the flood plain, where the soils are older, medium textured, very deep, and well drained. This portion of the flood plain is affected by occasional flooding and is used for orchards, but it was historically dominated by Valley Oak Woodland. Germination patterns reflect ponding patterns, while seedling survival is dependent on depth to root-restricting gravel and the water table. Successful flood-plain and riparian habitat restoration must include detailed soil mapping to determine depth to the water table, which especially affects woody species survival and selection, and the presence of gravel, which limits root growth in woody species (Silveira and others, 2003).

Riparian and flood-plain wildlife habitats are characterized by a rich mosaic of vegetation, which forms closed- to open-canopy forests, woodlands, scrublands, and areas dominated by a variety of perennial and annual herbaceous plants. Forest and woodland understories range from relatively open areas of forbs, grasses, and sedges to impenetrable thickets of shrubs, blackberries, and vines.

Chart A.—Valley and Terrace Wildlife Habitats in Butte Area Soil Groups

General soil map unit	Kind of wildlife habitat						
	Valley & Foothill Riparian	Valley Oak Woodland	Fresh Emergent Wetland	Annual Grasdsland	Pasture	Cropland	Orchard-Vineyard
1. Parrot-Gianella-Farwell	X	X	X			X	X
2. Xerorthents, Tailings-Gianella	X	X	X				X
3. Lofgren-Blavo			X		X	X	
4. Esquon-Neerdobe			X			X	
5. Bosquejo-Galt						X	
6. Gridley Taxadjunct-Subaco Taxadjunct			X		X	X	
7. Olashes						X	X
8. Conejo-Almendra-Vina	Y	X			X		X
9. Haploxerolls-Durixerolls	Z				X	X	X
10. Redsluff-Redtough-Redswale				X			
11. Liveoak-Boga-Loemstone		Y			X		X
12. Eastbiggs-Duric Xerarents-Kimball		Y		X			X
13. Thompsonflat-Oroville-Vistarobles				X			

X indicates widespread distribution and/or dominant cover.
Y indicates savanna or shrubland (widely spaced trees and shrubs).
Z indicates limited distribution because of soil type or fire.

Chart B.—Foothill Wildlife Habitats in Butte Area Soil Groups

General soil map unit	Kind of wildlife habitat							
	Valley & Foothill Riparian	Annual Grassland	Blue Oak Woodland	Blue Oak-Foothill Pine	Chamise-Redshank Chaparral	Mixed Chaparral	Mixed Chaparral & Annual Grassland	Montane Hardwood-Conifer
14. Palexerults-Rock Outcrop, Basalt-Coalcanyon		X	X					
15. Tuscan-Clearhayes-Typic Xerofluvents	X	X						
16. Lucksev-Butteside-Carhart		X	X					
17. Doemill-Jokerst		X	Y					
18. Xerorthents, Shallow-Typic Haploxeralfs-Doemill		X	Y	X	Z	X		
19. Dunstone-Loafercreek-Argonaut Taxadjunct		X	X					
20. Dunstone-Loafercreek-Oroshore		X		X		X		
21. Mounthope-Hartsmill				X		X		
22. Ultic Haploxeralfs, Thermic, High Terrace		X	Y					
23. Flanly-Swedesflat-Parkshill			X	X		X		
24. Crystalhill-Oregongulch-Craigsaddle						X		
25. Rockstripe-Ultic Haploxeralfs, Mesic-Ultic Halpoxeralfs							X	
26. Bigridge-Minniecreek						X		X

X indicates widespread distribution and/or dominant cover.
Y indicates savanna or shrubland (widely spaced trees and shrubs).
Z indicates limited distribution because of soil type or fire.

Chart C.—Mountain Wildlife Habitats in Butte Area Soil Groups

General soil map unit	Kind of wildlife habitat					
	Ponderosa Pine	Sierran Mixed Conifer	Ultramafic Vegetation	Montane Chaparral	Montane Riparian	Wet Meadow
27. Paradiso-Schlott-Tusccoll	X	X				
28. Mountyana-Beecee-Lydon		X				
29. Redbone		X				
30. Surnuf-Griffgulch-Typic Haploxeralfs, Magnesic	X	X	X			
31. Toadtown-Powellton-Rogerville		X				
32. Obstruction-Obskel-Bottlehill		X				
33. Islandbar-Featherfalls-Chawanakee		X				
34. Bonneyridge-Chawanakee-Lewisflat	Y	Z			Z	Z
35. Mudwash-Shakeridge-Timberisland		X				
36. Bolepile		X				
37. Powderhouse-McNair-Greenwell		X				
38. Dejonah-Stagpoint		X				Z
39. Haploxerands, Volcanic Till-Haploxerands, Granitic Till		X		Z		Z

X indicates widespread distribution and/or dominant cover.
Z indicates limited distribution because of soil type or fire.

Riparian and flood-plain trees include:

arroyo willow
boxelder
California button-bush
Fremont's cottonwood
Goodding's black willow
Northern California black walnut (feral hybrids with commercial English walnut)
Oregon ash
sandbar willow
valley oak
western sycamore
white alder

Flood-plain shrubs include:

blue elderberry
California blackberry
California manroot
California pipevine
California rose
California wild grape
coyote-brush
Himalayan blackberry (invasive)
hoary creek nettle
mugwort
mule's fat
Oregon golden aster
rose mallow
virgin's bower
western goldenrod

Herbaceous flood-plain plants include:

alkali ryegrass (creeping wildrye)
American black nightshade
broad-leaved pepper-weed (invasive)
clustered field sedge
Johnson-grass (invasive)
ripgut brome
Santa Barbara sedge
sharp-leaved fluellin (invasive)
showy milkweed
Sonoma hedge-nettle
telegraph weed
thorn-apple
yellow star-thistle (invasive)
yellow water-weed (invasive)

Cut banks, sandbars, gravel bars, and gravel beds are used by wildlife for nesting and spawning. Cut banks along the Sacramento River support the largest bank swallow colonies in California.

Animals use riparian habitats as breeding and wintering areas and as migration corridors, where the wildlife moves among various valley, foothill, and mountain habitats, depending on the season and the annual behavioral and physiological-energetic cycle of the animals.

Fishes include:

American shad
California roach
Chinook salmon (winter run, spring run, fall and late fall run)
green sturgeon
hardhead
hitch
Pacific lamprey
prickly sculpin
riffle sculpin
river lamprey
Sacramento splittail
Sacramento sucker
Sacramento whitefish
speckled dace
steelhead
striped bass
threadfin shad
western brook lamprey
white sturgeon

Amphibians and reptiles include:

bullfrog
common garter snake
gopher snake
Pacific tree frog
slider
southern alligator lizard
western fence lizard
western pond turtle
western rattlesnake

Birds include:

acorn woodpecker
American goldfinch
American kestrel
American white pelican
Anna's hummingbird
ash-throated flycatcher
bald eagle
bank swallow
barn owl
belted kingfisher
Bewick's wren
black-chinned hummingbird
black-headed grosbeak
black phoebe
blue grosbeak
brown creeper
brown-headed cowbird
Bullock's oriole
bushtit
California quail
California towhee

Canada goose
Caspian tern
common goldeneye
common merganser
common moorhen
Cooper's hawk
double-crested cormorant
fox sparrow
great blue heron
great egret
great horned owl
hermit thrush
killdeer
lark sparrow
lazuli bunting
lesser goldfinch
lesser nighthawk
mallard
Nuttall's woodpecker
oak titmouse
orange-crowned warble
osprey
Pacific-slope flycatcher
purple finch
red-shouldered hawk
red-tailed hawk
ruby-crowned kinglet
song sparrow
spotted sandpiper
spotted towhee
Swainson's hawk
Swainson's thrush
tree swallow
turkey vulture
warbling vireo
western wood pewee
western yellow-billed cuckoo
white-breasted nuthatch
wild turkey
willow flycatcher
wood duck
yellow-breasted chat
yellow-rumped warbler
yellow warbler

Mammals include:

beaver
big free-tailed bat
black-tailed deer
bobacat
California myotis
California vole
coyote
Mexican free-tailed bat

mountain lion
pallid bat
porcupine
raccoon
red bat
ringtail
river otter
western gray squirrel
wild pig

Northeast Sacramento Valley Flood Basins

Annual Grassland, Freshwater Marsh, and rice paddies characterize these flood basins. Hydric soils dominate the basins. They are distinguished by saturation and anaerobic conditions, ponding, a high shrink-swell potential, deep cracking, and a high content of clay. Plant growth and survival are limited to species adapted to wetland conditions. Few soil-related limitations affect the creation of ponds on this landscape.

Flood-basin wildlife habitats occur as areas of open water, emergent marshes, grasslands, and rice fields. They are dissected by willow-lined creeks, sloughs, and canals. Flood-basin plants and waste grains from rice harvests provide vital wildlife food and cover.

Flood-basin wetland plants include:

arrowheads
bulrushes
burhead
cattails
hard-stemmed tule
Goodding's black willow
pale spike-rush
pondweeds
pricklegrass
sedges
smartweeds
smooth spike-primrose
square-stemmed spike-rush
swamp timothy
toad rush
water-grass
water-plantain

Goodding's black willow is adapted to and occurs in areas of clays and clay loams, typically adjacent to creeks, sloughs, canals, and ponds.

Flood-basin grassland plants include:

alkali-mallow
alkali ryegrass
annual ryegrass (dominant)
annual salt marsh aster
bindweed (invasive)
black mustard
blue wild-rye
broad-leaved pepper-weed (invasive)
California aster
clovers

common fiddleneck
common spikeweed
curly dock
double-horned downingia
dwarf pepper-grass
Ferris' milk-vetch (rare)
Johnson-grass (invasive)
lupines
meadow barley
milk-thistle
narrow-leaved milk-weed
red-flowered vetch
Scribner's grass
valley gumplant
water pygmyweed
yellow-rayed goldfields
wild radish

Mudflats form from drained marshes and rice fields. They provide vitally important feeding habitat for spring-staging shore birds.

Butte Basin and northeast Sacramento Valley wetlands provide vital winter and migration stopover habitats supporting some of the most abundant assemblages of migratory waterfowl in the valley. Peak populations reach 1.4 million ducks, geese, and swans, shore birds, and sandhill cranes. Canada goose, mallard, cinnamon teal, American bittern, white-faced ibis, red-tailed hawk, and northern harrier breed in flood-basin habitats.

Amphibians and reptiles include:

bullfrog
common garter snake
giant garter snake
gopher snake
western aquatic garter snake
western pond turtle
western yellow-bellied racer

Birds include:

American avocet
American bittern
American coot
American goldfinch
American pipit
American wigeon
bald eagle
black-bellied plover
black-crowned night heron
black-neck stilt
black tern
Brewer's blackbird
bufflehead
cackling goose
Canada goose
cinnamon teal
Clark's grebe
common yellowthroat

dowitchers
dunlin
eared-grebe
gadwall
grasshopper sparrow
great blue heron
great egret
great horned owl
greater yellowlegs
green bittern
green-winged teal
herring gull
killdeer
lark sparrow
least bittern
lesser goldfinch
Lincoln's sparrow
loggerhead shrike
long-billed curlew
mallard
marsh wren
northern harrier
northern pintail
northern shoveler
Pacific white-fronted goose
peregrine falcon
pied-billed grebe
redhead
red-tailed hawk
red-winged blackbird
ring-billed gull
ring-necked duck
ring-necked pheasant
Ross' goose
ruddy duck
sandhill cranes
sandpipers
savanna sparrow
semipalmated plover
sharp-shinned hawk
snow goose
snowy egret
song sparrow
sora
tricolored blackbird
tundra swan
Virgina rail
western grebe
western meadowlark
whimbrel
white-crowned sparrow
white-faced ibis
white-tailed kite
Wilson's phalarope

wood duck
yellow-headed blackbird
yellow-rumped warbler

Mammals include:

beaver
black-tailed jackrabbit
coyote
desert cottontail
muskrat
Norway rat

Northeast Sacramento Valley Alluvial Fans

Valley Oak Woodland and walnut and almond orchards distinguish the northeast Sacramento Valley alluvial fans. Valley Riparian Forest also provides wetland wildlife habitat. The soils are highly productive, deep, and well drained and have few limitations.

The valley alluvial fans are characterized by urban areas, almond and walnut orchards, and remnant stands of valley oak trees. Historically, Valley Oak Woodland dominated the alluvial fans, forming expansive closed-canopy woodlands to open savannas (with varying degrees of widely spaced oaks on the grassland). A large valley oak woodland remains in Chico.

Valley oak is the dominant tree. Common shrubs include:

blue elderberry
California blackberry
California wild rose
poison oak

Common herbaceous plants include:

annual ryegrass
black mustard
clovers
common fiddleneck
filarees
foxtail fescue
lupines
miner's lettuce
soft chess
wild radish
yellow star-thistle (invasive)

Animal species overlap with those on similar adjacent habitats on flood plains, terraces, and foothills.

Fishes include:

California roach
Chinook salmon (spring run)
hardhead
hitch
Pacific lamprey
prickly sculpin
rainbow trout
riffle sculpin

Sacramento sucker
Sacramento whitefish
speckled dace
steelhead

Amphibians and reptiles include:

common garter snake
gopher snake
western fence lizard
western skink
western toad

Birds include:

acorn woodpecker
American crow
American robin
barn owl
Bewick's wren
black-headed grosbeak
brown creeper
bushtit
California quail
Cooper's hawk
dark-eyed junco
European starling
fox sparrow
golden-crowned kinglet
great-horned owl
house finch
house sparrow
lark sparrow
mourning dove
northern mockingbird
oak titmouse
red-shouldered hawk
red-tailed hawk
ruby-crowned kinglet
sharp-shinned hawk
western kingbird
western screech-owl
western scrub jay
white-breasted nuthatch
white-crowned sparrow
yellow-billed magpie

Mammals include:

Botta's pocket gopher
black rat
California ground squirrel
coyote
deer mouse
feral house cat
gray fox
harvest mouse

house mouse
opossum
raccoon
striped skunk
Townsend mole
vagrant shrew
western gray squirrel

Southern Cascade and Northern Sierra Nevada Fan Terraces

Annual Grassland dominates this landscape, which also includes small areas of rice and almond and citrus orchards. The Southern Cascade Terrace gradually slopes from the foothills to the valley, while the Northern Sierra Nevada Fan Terraces form a rolling terrain. Mound-swale microtopography and ephemeral drainages occur throughout this landscape. The soils are very shallow to moderately deep, are underlain by a duripan, are seasonally saturated in winter by a high water table perched on the duripan, and are very dry in summer. These conditions limit plants to annual grasses and forbs and result in the extreme, alternating lush and harsh character of this landscape. Livestock grazing, particularly by cattle, plays a major role in the structure of grassland vegetation and may be used to improve native wildflower (forb) diversity and abundance and the quality and capacity of the wildlife habitat (Marty, 2005; Silveira, 1998). Prescribed fire can reduce the extent of medusa-head grass and improve the quality of livestock forage, native plant abundance, and wildlife habitat (Griggs, 2000).

Annual grasslands with vernal pools characterize the fan terraces. Vernal pools support a highly endemic flora and unique vegetation (Barbour and others, 2003; Holland and Dains, 1990). The plants in the vernal pools are considered wetland species and are specially adapted to survive the extreme conditions of the wet-dry cycle.

Vernal-pool plants include:

annual hairgrass
Butte County meadowfoam (rare)
cleistogamous spike-primrose
coyote-thistle
Douglas' pogogyne
dwarf wooly-marbles
folded downingia
Fremont's goldfields
Green's tuctoria (rare)
Oregon wooly-marbles
popcorn flowers
rosy meadowfoam
Sacramento Valley pogogyne
smooth goldfields
toothed downingia
tricolored monkey flower
valley vernal pool foxtail
water buttercup
white-flowered navarretia
white meadowfoam
white-tipped clover
wooly meadowfoam
yellow carpet

Grassland plants include:

annual ryegrass
bicolored lupine
bluedicks
Butte County golden clover (rare)
butter and eggs
field owl-clover
filarees
Fitch's spike-weed
Fremont's tidy tips
foxtail fescue
hayfield tarweed
lowland shooting-star
Menzies' fiddleneck
shining pepper-grass
soft chess
sticky tarweed
Tehama navarretia
veiny monardella (rare)
wild oats
yellow star-thistle (invasive)

Vernal pools are extremely productive wetlands that support an abundance of native invertebrates during wet, late winter and early spring periods. In fact, California vernal pools support the greatest diversity of fairy shrimp species per area on earth (Eriksen and Belk, 1999). Invertebrates and grasses are high-protein food sources for migratory waterfowl, shore birds, and sandhill cranes (Silveira, 1998).

Amphibians and reptiles include:

gopher snake
striped racer
western rattlesnake
western spadefoot

Birds include:

American kestrel
American pipit
American wigeon
burrowing owl
cackling goose
California horned lark
Canada goose
cliff swallow
golden eagle
greater yellowlegs
green-winged teal
killdeer
loggerhead shrike
long-billed curlew
mallard
mourning dove
northern pintail
prairie falcon
red-tailed hawk

sandhill cranes
savanna sparrow
short-eared owl
western bluebird
western meadowlark

Mammals include:

black-tailed jackrabbit
Botta's pocket gopher
California ground squirrel
coyote

Feather River Terraces

Valley Oak Woodland and fruit orchards characterize this landscape. Valley oak occurs in deep, well drained alluvial soils. The soils are productive, deep, and well drained and have few limitations.

Fruit, nut, and citrus orchards and scattered remnant stands of valley oak dominate the Feather River Terrace. Valley Oak Woodland, which formed closed-canopy stands to open savanna, historically dominated this landscape.

Common herbaceous plants include:

common fiddleneck
fillarees
foxtail fescue
miner's lettuce
soft chess
wild oats

Cut banks along the Feather River support limited colonies of bank swallows.

Animal species overlap with those on similar adjacent habitats on flood plains and alluvial fans.

Amphibians and reptiles include:

common snake
gopher snake
western toad

Birds include:

American crow
American goldfinch
American kestrel
American robin
Bullock's oriole
mourning dove
northern flicker
northern mockingbird
red-tailed hawk
white-crowned sparrow
yellow-billed magpie

Mammals include:

Botta's pocket gopher
California ground squirrel

coyote
townsend mole

Northern Sierra Nevada and Southern Cascade Foothills

Blue Oak Woodland, Blue Oak-Foothill Pine, Montane Hardwood Forest, and Mixed Chaparral dominate this landscape. Annual Grassland is limited to the lower elevations in blue oak savannas, and Chamise-Redshank Chaparral is limited to the Cohasset Ridge. Foothill Riparian Forest provides vital wetland wildlife habitat. Important soil characteristics, which affect plant growth and vigor and vegetation patterns, include depth to bedrock, content of rock fragments, available water capacity, slope, and parent material. The periodicity of wildfire plays a major role in plant succession and vegetation patch age and structure. Prescribed fire may be used to improve wildlife habitat (Taber and Dasmann, 1958) and provide protection from wildfire. Grazing to increase grassland diversity and the quality of wildlife habitat is a management consideration in Annual Grassland and Blue Oak Woodland habitats. Water developments for wildlife are limited by soil depth, slope, and the availability of water (seeps and springs) on upland sites.

An extremely rich and diverse mosaic of trees and shrubs characterizes foothill habitat, which forms open savannas to closed-canopy woodlands and open scrubland to interlocking shrub stands (chaparral). Woodland understory commonly forms dense, impenetrable thickets.

Foothill trees include:

bigleaf maple
blue oak (dominant)
California black oak
California buckeye
California laurel
canyon live oak (dominant)
Douglas-fir (higher elevations)
foothill pine (dominant)
incense cedar
interior live oak (dominant)
McNab cypress (ultramafic soils)
Oregon oak (limited)
Pacific madrone
ponderosa pine
redbud
valley oak (deeper soils)

Foothill shrubs include:

birch-leaved mountain-mahogany
buckbrush
bush monkey flower
California coffeeberry
California yerba santa
chamise
common manzanita
deerbrush
Fremont's silk-tassel
holly-leaf cherry
holly-leaf redberry
leather oak

Lemmon's ceanothus
poison oak
scrub oak
toyon
western spice bush
whiteleaf manzanita

Herbaceous annuals on foothills are similar to those on the Southern Cascade and Northern Sierra Nevada fan terraces. At the lower western margins, they also include:

bird's eye gilia
bitter-root
California goldfields
canyon dudleya
Douglas' violet
dwarf-stonecrop
foothill gumplant
foothill poppy
Indian paintbrush
Ithuriel's spear
jewel-flower
Kellogg's monkey-flower
lace-pod
Mariposa lily
Menzies' fiddleneck
mustang-mint
naked buckwheat
purple owl-clover
royal larkspur
seep monkey-flower
serpentine phacelia
Shasta meadowfoam
sky lupine
sticky navarretia
Table Mountain meadowfoam
tansy phacelia
white meadowfoam
wild onion
woodlandstar

Dazzling spring wildflower displays may occur on Table Mountain in years with germinating fall rains, mild winters, and above-average rainfall in late winter and early spring.

Outcrops of lava flows, volcanic mudflows, basalt and metavolcanic rock outcrops, and diorite, gabbro, and quartz rocks provide cover and sites for perching, basking, nesting.

Foothill habitats provide vital breeding, winter, and migration corridor-stopover habitats, which support the most diverse assemblage of abundant resident and migratory animals in Butte County. The combination of dense and/or multilayered vegetation with open vegetation provides the highest quality wildlife habitat in the foothills, a result of diverse structure and edge effect (the contact zone of two or more habitats). The best example is general soil map unit 25, where large stands of Mixed Chaparral interlace with patches of Annual Grassland on shallow soils. General soil map unit 18 has patterns of an annual grassland matrix with small groves and widely spaced or individual blue oaks (a savanna form of Blue Oak Woodland) and has

discrete stands of foothill pine, hardwood trees, and shrubs, which may also be widely spaced (Blue Oak-Foothill Pine).

Resident species move among the various kinds of wildlife habitat in the foothills and among the habitats in the adjacent valley and mountains.

Fishes include:

California roach
Chinook salmon (spring run)
hardhead
hitch
Pacific lamprey
prickly sculpin
rainbow trout
riffle sculpin
Sacramento sucker
Sacramento whitefish
speckled dace
steelhead

Amphibians and reptiles include:

California newt
California slender salamander
California whipsnake
coast horned-lizard
common garter snake
common kingsnake
ensatina
foothill yellow-legged frog
gopher snake
night snake
Pacific tree frog
red-legged frog
ringneck snake
rubber boa
sharp-tailed snake
southern alligator lizard
western fence lizard
western pond turtle
western rattlesnake
western skink
western spadefoot
western terrestrial garter snake
western whiptail
western yellow-bellied racer

Birds include:

American goldfinch
American kestrel
Anna's hummingbird
ash-throated flycatcher
band-tailed pigeon
black-chinned hummingbird

black-throated gray warbler
blue-gray gnatcatcher
bushtit
California quail
California thrasher
canyon wren
Cassin's vireo
cedar waxwing
chipping sparrow
common raven
downy woodpecker
dusky flycatcher
fox sparrow
golden eagle
lesser goldfinch
MacGillivray's warbler
mourning dove
Nashville warbler
Nuttall's woodpecker
oak titmouse
orange-crowned warbler
Pacific-slope flycatcher
phainopepla
prairie falcon
red-tailed hawk
savanna sparrow
Say's phoebe
turkey vulture
warbling vireo
western bluebird
western screech-owl
western scrub jay
western wood-pewee
white-breasted nuthatch
wild turkey

Mammals include:

black bear
black-tailed deer
bobcat
Botta's pocket gopher
California ground squirrel
California kangaroo rat
California myotis and other bats
coyote
deer mouse
gray fox
long-tailed weasel
mink
mountain lion
striped skunk
wild pig

Southern Cascade and Northern Sierra Nevada Mountains

Sierran Mixed Conifer forests dominate the Butte County mountain landscape as a multilayered, closed-canopy forest. Ponderosa Pine, Montane-Hardwood Conifer forests, and limited Montane Chaparral also occur on this landscape. Montane Riparian and Wet Meadow provide vital wetland wildlife habitat. Soils that formed in material weathered from serpentine and granite support unique stands of vegetation and many endemic plants (Faber, 1997). Depth to bedrock, texture, slope, and parent material affect plant growth and vigor and the distribution of vegetation. The periodicity of wildfire and commercial forestry practices affect forest stand age, structure, and succession. Water developments for wildlife are limited by soil depth, slope, and the availability of water (seeps and springs) on upland sites.

Dominant trees of coniferous forests include:

Douglas-fir
incense cedar
ponderosa pine
sugar pine
white fir

Ponderosa pine is abundant at the lower elevations and on south-facing slopes. Jeffery pine replaces ponderosa pine at the higher elevations and in ultramafic soils. Red fir occurs at the higher elevations, mixing with sugar pine and white fir.

Other forest trees include a mixture of (Hanson, 2003 and 2004):

bigleaf maple
California bay
California black oak
California hazelnut
California nutmeg
canyon live oak
Pacific madrone
mountain alder
mountain dogwood
tanoak
western yew
white alder

Understory forest shrubs include (Hanson, 2003 and 2004):

bald-hip rose
bitter cherry
deerbrush
greenleaf manzanita
mountain misery
mountain pink currant
oceanspray or creambush
pinemat ceanothus
pinemat manzanita
prostrate ceanothus
Sierra chinquapin
Sierra gooseberry
tan oak
True's manzanita
whitethorn ceanothus

Montane chaparral is limited by fire; shrubs include (Hanson, 2003 and 2004):

bitter cherry
creeping snowberry
greenleaf manzanita
huckleberry oak
Sierra chinquapin
wedgeleaf ceanothus

At the lower elevations, herbaceous forest plants include (Hanson, 2003 and 2004):

California puccoon
chaparral honeysuckle
cut-leaf butterweed
dogbane
Eastwood's fritillary
fawn lily
frosted Indian paintbrush
gold back fern
Hartweg's iris
Hartweg's wild ginger
Jepson's onion
lobed violet
maidenhair fern
Mosquin's clarkia
mustang-mint
Pacific bleedinghearts
Pacific hound's tongue
Pacific starflower
redribbons
scarlet fritillary
shining white-stemmed swertia
slender bird's beak
small flowered woodlandstar
sticky bird's beak
sword fern
tall horkelia
wavy-leaved paintbrush
white-stemmed clarkia
woodland strawberry

At the higher elevations, herbaceous forest plants include (Hanson, 2003 and 2004):

bracken fern
closed-lipped penstemon
clustered lady's slipper
creeping snowberry
little prince's pine
Lobb's nama
Mildred's clarkia
pipsisewa
rattlesnake plantain
Sierra laurel
Sierra stickseed
Washington lily
western false Solomon's seal
white-veined wintergreen

Outcrops of metavolcanic, ultramafic, and quartz diorite, lava flows, and andesitic mudflows provide cover and sites for perching, basking, and nesting.

Mountain wildlife habitat supports a variety of resident and migratory animals, which move across and use various adjacent mountain and foothill habitats.

Fishes include:

brown trout
Chinook salmon (spring run)
hardhead
rainbow trout
Sacramento sucker
speckled dace
steelhead

Amphibians and reptiles include:

California mountain kingsnake
common garter snake
gopher snake
mountain yellow-legged frog
western aquatic garter snake
western rattlesnake
western terrestrial garter snake

Birds include:

American dipper
American robin
band-tailed pigeon
blue grouse
brown creeper
calliope hummingbird
Cassin's finch
Cassin's vireo
common raven
dark-eyed junco
dusky flycatcher
evening grosbeak
goshawk
Hammond's flycatcher
hermit warbler
hermit thrush
MacGillivray's warbler
mountain bluebird
mountain chickadee
mountain quail
Nashville warbler
northern pygmy-owl
northern saw-whet owl
olive-sided flycatcher
Pacific-slope flycatcher
red-breasted nuthatch
red crossbill
spotted owl
Steller's jay
Swainson's thrush

varied thrush
western tanager
white-breasted nuthatch
white-headed woodpecker
Wilson's warbler

Mammals include:

black bear
black-tailed deer
California myotis and other bats
chipmunks
coyote
Douglas squirrel
dusky-footed woodrat
fisher
gray fox
long-tailed weasel
marten
mink
mountain lion
northern flying squirrel
Pacific shrew
porcupine
Sierra Nevada red fox
spotted skunk
vagrant shrew

Recreation

The soils of the survey area are rated in tables 15a and 15b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *No limitations* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Limitations* with a value of more than 0.00 but less than 1.00 can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Limitations* with a value of 1.00 indicate that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00). Ratings of 0.00 are not displayed in the tables.

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season

when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in tables 15a and 15b can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Table 15a

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

The management considerations for camp areas are as follows:

Bedrock depth.—Shallow depth to bedrock limits site preparation activities, such as shaping and leveling; may affect plant growth; and restricts the ability of the soil to support multiple-use recreational activities.

Depth to pan.—Depth to a cemented pan limits site preparation activities, such as shaping and leveling; may affect plant growth; and restricts the ability of the soil to support multiple-use recreational activities.

Dusty or very dusty.—Soils that have a silty surface layer and a xeric moisture regime are dusty when dry. Soils derived from volcanic ash also are dusty when dry.

Flooding.—In areas where the soils are subject to flooding, the development and performance of camp areas may be limited. Flooding also affects trafficability.

Fragments (less than 3").—Gravel (rock fragments less than 3 inches in diameter) in the surface layer is a concern. Development and maintenance of camp areas may be limited, and trafficability may be affected.

Fragments (greater than 3").—An excessive amount of rock fragments more than 3 inches in diameter in the surface layer is a concern. Development and maintenance of camp areas may be limited, and trafficability may be affected.

Fragments (greater than 10").—An excessive amount of stones and boulders (rock fragments more than 10 inches in diameter) on the soil surface may impede development and maintenance of camp areas.

Organic surface layer.—Soils in Unified class PT have a high content of organic matter and low strength. Trafficability is affected.

Permeability (Ksat).—The soil horizon with the minimum Ksat governs the rate of water movement through the whole soil. If this rate is low, the transmission of fluids into the soil (infiltration) and through the soil (percolation) is impeded. Water may be ponded for extended periods of time. Trafficability and plant growth are affected.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Soils that are subject to ponding have restrictions that limit the installation and functioning of most land use applications. Trafficability may be affected.

Saturation.—In areas of soils that have a water table at a shallow depth, trafficability may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes impede trafficability of heavy machinery and limit the development of camp areas.

Surface clay.—Soils that have a clayey surface layer have a slow rate of water infiltration, are slippery and sticky when wet, and are slow to dry. Trafficability is affected, and compaction may inhibit the growth of common plants.

Surface EC.—Soils with high salinity have a reduced available water capacity and may have salinity toxicity, which restricts vigorous plant growth and hinders the reestablishment of vegetation in disturbed areas.

Surface sand fractions.—Soils that have a sandy surface layer are subject to blowing sand, are difficult to revegetate, are soft and loose, and are droughty. Trafficability is affected, and the ability of the soil to support multiple-use recreational activities is limited.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

The management considerations for picnic areas are as follows:

Bedrock depth.—Shallow depth to bedrock limits site preparation activities, such as shaping and leveling; affects plant growth; and restricts the soil's ability to support multiple-use recreational activities.

Depth to pan.—Depth to a cemented pan limits site preparation activities, such as shaping and leveling; affects plant growth; and restricts the soil's ability to support multiple-use recreational activities.

Dusty or very dusty.—Soils that have a silty surface layer and a xeric moisture regime are dusty when dry. Soils derived from volcanic ash also are dusty.

Fragments (less than 3").—Gravel (rock fragments less than 3 inches in diameter) in the surface layer is a concern. Development and maintenance of picnic areas may be limited, and trafficability may be affected.

Fragments (greater than 3").—An excessive amount of rock fragments more than 3 inches in diameter in the surface layer is a concern. Development and maintenance of picnic areas may be limited, and trafficability may be affected.

Fragments (greater than 10").—An excessive amount of stones and boulders (rock fragments more than 10 inches in diameter) on the soil surface may impede development and maintenance of picnic areas.

Frequent flooding.—Flooding limits the use and management of the soils as recreational areas. Trafficability is affected.

Organic surface layer.—Soils in Unified class PT have a high content of organic matter and low strength. Trafficability is affected.

Permeability (Ksat).—The soil horizon with the minimum Ksat governs the rate of water movement through the whole soil. If this rate is low, the transmission of fluids into the soil (infiltration) and through the soil (percolation) is impeded. Water may be ponded for extended periods of time. Trafficability and plant growth are affected.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Soils that are subject to ponding have restrictions that limit the installation and functioning of most land use applications. Trafficability may be affected.

Saturation.—In areas of soils that have a water table at a shallow depth, trafficability may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes impede trafficability of heavy machinery and limit the development of picnic areas.

Surface clay.—Soils that have a clayey surface layer have a slow rate of water infiltration, are slippery and sticky when wet, and are slow to dry. Trafficability may be affected, and compaction may hinder the growth of common plants.

Surface EC.—Soils with high salinity have a reduced available water capacity and may have salinity toxicity, which restricts vigorous plant growth and hinders the reestablishment of vegetation in disturbed areas.

Surface sand fractions.—Soils that have a sandy surface layer are subject to blowing sand, are difficult to revegetate, are soft and loose, and are droughty. Trafficability is affected, and the ability of the soil to support multiple-use recreational activities is limited.

Surface SAR.—In areas where the soils have a high sodium adsorption ratio, plant growth may be restricted. The reestablishment of vegetation is limited in disturbed areas.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

The management considerations for playgrounds are as follows:

Bedrock depth.—Shallow depth to bedrock limits site preparation activities, such as shaping and leveling; affects plant growth; and restricts the soil's ability to support multiple-use recreational activities.

Depth to pan.—Depth to a cemented pan limits site preparation activities, such as shaping and leveling; affects plant growth; and restricts the soil's ability to support multiple-use recreational activities.

Dusty or very dusty.—Soils that have a silty surface layer and a xeric moisture regime are dusty when dry. Soils derived from volcanic ash also are dusty.

Fragments (greater than 3").—An excessive amount of rock fragments more than 3 inches in diameter in the surface layer is a concern. Development and maintenance of playgrounds may be limited, and trafficability may be affected.

Fragments (greater than 10").—An excessive amount of stones and boulders (rock fragments more than 10 inches in diameter) on the soil surface may impede development and maintenance of playgrounds.

Occasional flooding.—Flooding limits the use and management of the soils as recreational areas. Trafficability is affected.

Organic surface layer.—Soils in Unified class PT have a high content of organic matter and low strength. Trafficability is affected.

Permeability (Ksat).—The soil horizon with the minimum Ksat governs the rate of water movement through the whole soil. If this rate is low, the transmission of fluids into the soil (infiltration) and through the soil (percolation) is impeded. Water may be ponded for extended periods of time. Trafficability and plant growth are affected.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Soils that are subject to ponding have restrictions that limit the installation and functioning of most land use applications. Trafficability may be affected.

Saturation.—In areas of soils that have a water table at a shallow depth, trafficability may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes impede site preparation activities, such as shaping and leveling, and restrict the ability of the soil to support multiple-use recreational activities.

Surface clay.—Soils that have a clayey surface layer have a slow rate of water infiltration, are slippery and sticky when wet, and are slow to dry. Trafficability may be affected, and compaction may hinder the growth of common plants.

Surface EC.—Soils with high salinity have a reduced available water capacity and may have salinity toxicity, which restricts vigorous plant growth and hinders the reestablishment of vegetation in disturbed areas.

Surface fragments (less than 3").—Gravel (rock fragments less than 3 inches in diameter) in the surface layer is a concern. Development and maintenance of playgrounds may be limited, and trafficability may be affected.

Surface sand fractions.—Soils that have a sandy surface layer are subject to blowing sand, are difficult to revegetate, are soft and loose, and are droughty. Trafficability is affected, and the ability of the soil to support multiple-use recreational activities is limited.

Surface SAR.—In areas where the soils have a high sodium adsorption ratio, plant growth may be restricted. The reestablishment of vegetation is limited in disturbed areas.

Table 15b

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

The management considerations for paths and trails are as follows:

Dusty or very dusty.—Soils that have a silty surface layer and a xeric moisture regime are dusty when dry. Soils derived from volcanic ash also are dusty.

Fragments (greater than 3").—An excessive amount of rock fragments more than 3 inches in diameter in the surface layer is a concern. Development and maintenance of paths and trails may be limited, and trafficability may be affected.

Fragments (greater than 10").—An excessive amount of stones and boulders (rock fragments more than 10 inches in diameter) on the soil surface may impede development and maintenance of paths and trails.

Frequent flooding.—Flooding limits the use and management of the soils as recreational areas. Trafficability is affected.

K factor and slopes.—Soils with a high K factor and steep slopes are susceptible to erosion in areas used for paths and trails. Practices that help to control water erosion may be needed.

Organic surface layer.—Soils in Unified class PT have a high content of organic matter and low strength. Trafficability is affected.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Soils that are subject to ponding have restrictions that limit the installation and functioning of most land use applications. Trafficability may be affected.

Saturation.—In areas of soils that have a water table at a shallow depth, trafficability may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes impede site preparation activities, such as shaping and leveling, and restrict the ability of the soil to support multiple-use recreational activities.

Surface clay.—Soils that have a clayey surface layer have a slow rate of water infiltration, are slippery and sticky when wet, and are slow to dry. Trafficability may be affected, and compaction may hinder the growth of common plants.

Surface fragments (less than 3").—Gravel (rock fragments less than 3 inches in diameter) in the surface layer is a concern. Development and maintenance of paths and trails may be limited, and trafficability may be affected.

Surface sand fractions.—Soils that have a sandy surface layer are subject to blowing sand, are difficult to revegetate, are soft and loose, and are droughty. Trafficability is affected, and the ability of the soil to support multiple-use recreational activities is limited.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

The management considerations for off-road motorcycle trails are as follows:

Dusty or very dusty.—Soils that have a silty surface layer and a xeric moisture regime are dusty when dry. Soils derived from volcanic ash also are dusty.

Frequent flooding.—Flooding limits the use and management of the soils as recreational areas. Trafficability is affected.

Organic surface layer.—Soils in Unified class PT have a high content of organic matter and low strength. Trafficability is affected.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Soils that are subject to ponding have restrictions that limit the installation and functioning of most land use applications. Trafficability may be affected.

Saturation.—In areas of soils that have a water table at a shallow depth, trafficability may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes impede site preparation activities, such as shaping and leveling, and restrict the ability of the soil to support multiple-use recreational activities.

Surface clay.—Soils that have a clayey surface layer have a slow rate of water infiltration, are slippery and sticky when wet, and are slow to dry. Trafficability may be affected, and compaction may hinder the growth of common plants.

Surface fragments (less than 3").—Gravel (rock fragments less than 3 inches in diameter) in the surface layer is a concern. Development and maintenance of off-road motorcycle trails may be limited, and trafficability may be affected.

Surface fragments (greater than 3").—An excessive amount of rock fragments more than 3 inches in diameter in the surface layer is a concern. Development and maintenance of off-road motorcycle trails may be limited, and trafficability may be affected.

Surface fragments (greater than 10").—An excessive amount of stones and boulders (rock fragments more than 10 inches in diameter) on the soil surface may impede development and maintenance of off-road motorcycle trails.

Surface sand fractions.—Soils that have a sandy surface layer are subject to blowing sand, are difficult to revegetate, are soft and loose, and are droughty. Trafficability is affected, and the ability of the soil to support multiple-use recreational activities is limited.

Areas used for *lawns, landscaping, and golf fairways* require soils on which turf and ornamental trees and shrubs can be established and maintained. Such areas are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

The management considerations for lawns, landscaping, and golf fairways are as follows:

AWC.—Soils with a low available water capacity are droughty. This condition restricts plant growth and the establishment of grasses, shrubs, and trees.

Bedrock depth.—Shallow depth to bedrock limits the volume of soil that can be occupied by plant roots and may restrict plant growth.

Clay in surface.—Soils that have a clayey surface layer have a slow rate of water infiltration and are subject to compaction. The growth of grass and ornamental plantings may be limited. Trafficability may also be affected.

Depth to pan.—Shallow soils have a reduced water-holding capacity and restricted percolation rates. Plant growth may be affected.

Flooding.—In areas that are subject to more than rare flooding, trafficability may be affected.

Fragments (greater than 3").—An excessive amount of rock fragments more than 3 inches in diameter in the surface layer is a concern. Development and maintenance may be limited, and trafficability may be affected.

Fragments (gravel size).—Gravel (rock fragments less than 3 inches in diameter) in the surface layer is a concern. Maintenance and trafficability may be affected.

Loamy coarse sand surface.—Soils that have a sandy surface layer are subject to blowing sand, are difficult to revegetate, are soft and loose, and are droughty. Trafficability is affected, and the ability of the soil to support multiple-use recreational activities is limited.

Organic surface layer.—Soils in which the surface layer has a high content of organic matter have low strength. Trafficability is affected.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Soils that are subject to ponding have restrictions that limit the installation and functioning of most land use applications. Trafficability may be affected.

Saturation.—In areas of soils that have a water table at a shallow depth, plant growth and trafficability may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes impede the use of heavy machinery.

Surface EC.—Soils with high salinity have a reduced available water capacity and may have salinity toxicity, which restricts vigorous plant growth.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading “Soil Properties.”

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section.

Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 16a and 16b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, and shallow excavations.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *No limitations* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Limitations* with a value of more than 0.00 but less than 1.00 can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Limitations* with a value of 1.00 indicate that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00). Ratings of 0.00 are not displayed in the tables.

Table 16a

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost

penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table (saturation), ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table (saturation), ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

The management considerations for dwellings without basements are as follows:

Bedrock (hard).—Shallow depth to hard bedrock limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Bedrock (soft).—Shallow depth to soft bedrock limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Flooding.—In areas that are subject to flooding, the construction and functioning of buildings is limited.

Fragments (greater than 3").—Rock fragments more than 3 inches in diameter impede the workability of the soil and restrict the use of heavy machinery.

Organic matter.—Soils in Unified class PT, OL, or OH have a high content of organic matter and low strength and are hard to compact.

Pan (thick).—Depth to a thick cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding restricts the installation and functioning of most land use applications.

Saturation.—In areas of soils that have a water table at a shallow depth, the ability of the soil to support a load may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Shrink-swell (LEP).—Excessive shrinking and swelling in the thickest layer between depths of 25 and 100 centimeters can result in shifting of building foundations, cracking of flooring slabs, and buckling of roadways.

Slope.—Steep slopes impede the use of heavy machinery and affect the ease and amount of excavation.

Thin pan.—Depth to a thin cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

The management considerations for dwellings with basements are as follows:

Bedrock (hard).—Shallow depth to hard bedrock limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Bedrock (soft).—Shallow depth to soft bedrock limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Fragments (greater than 3").—Rock fragments more than 3 inches in diameter impede the workability of the soil and restrict the use of heavy machinery.

Frequent or occasional flooding.—In areas that are subject to flooding, the construction and functioning of buildings is limited.

Organic matter.—Soils in Unified class PT, OL, or OH have a high content of organic matter and low strength and are hard to compact.

Pan (thick).—Depth to a thick cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Pan (thin).—Depth to a thin cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Ponding.—Ponding is the condition where standing water is on the soil surface for

any period of time. Ponding restricts the installation and functioning of most land use applications.

Saturation.—In areas of soils that have a water table at a shallow depth, the ability of the soil to support a load may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Shrink-swell (LEP).—Excessive shrinking and swelling in the thickest layer between depths of 25 and 150 centimeters can result in shifting of building foundations and cracking of basements.

Slope.—Steep slopes impede the use of heavy machinery and affect the ease and amount of excavation.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table (saturation), ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table (saturation), ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

The management considerations for small commercial buildings are as follows:

Bedrock (hard).—Shallow depth to hard bedrock limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Bedrock (soft).—Shallow depth to soft bedrock limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Flooding.—In areas that are subject to flooding, the construction and functioning of buildings is limited. Flooding also affects the amount and ease of excavation

Fragments (greater than 3").—Rock fragments more than 3 inches in diameter impede the workability of the soil and restrict the use of heavy machinery.

Organic matter.—Soils in Unified class PT, OL, or OH have a high content of organic matter and low strength and are hard to compact.

Pan (thick).—Depth to a thick cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding restricts the installation and functioning of most land use applications.

Saturation.—In areas of soils that have a water table at a shallow depth, the ability of the soil to support a load may be affected. Such areas are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Shrink-swell (LEP).—Excessive shrinking and swelling in the thickest layer between depths of 25 and 100 centimeters can result in shifting of building foundations, cracking of flooring slabs, and buckling of roadways.

Slope.—Steep slopes impede the use of heavy machinery and affect the ease and amount of excavation.

Thin pan.—Depth to a thin cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Table 16b

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are

based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table (saturation), ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table (saturation), and ponding.

The management considerations for local roads and streets are as follows:

AASHTO GI (soil strength).—Soils with a high AASHTO group index number (GIN) have low strength, which affects the traffic-supporting capacity of the soil. This condition is only partially restrictive if the clay mineralogy is kaolinitic.

Bedrock (hard).—Shallow depth to hard bedrock limits site preparation activities, such as shaping and leveling, and affects the ease of excavation and grading for the construction of roads and streets.

Bedrock (soft).—Shallow depth to soft bedrock limits site preparation activities, such as shaping and leveling, and affects the ease of excavation and grading for the construction of roads and streets.

Flooding.—Flooding can damage roads and streets.

Fragments (greater than 3").—Rock fragments more than 3 inches in diameter impede the workability of the soil and restrict the use of heavy machinery.

Pan (thick).—Depth to a thick cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Saturation.—In areas of soils that have a water table at a shallow depth, the ability of the soil to support a load may be affected. The ease of excavation and grading may also be affected. Such areas can become waterlogged and boggy during periods of heavy precipitation and are slow to drain.

Shrink-swell (LEP).—Excessive shrinking and swelling in the thickest layer between depths of 25 and 100 centimeters can result in the buckling of roadways.

Slope.—Steep slopes impede the use of heavy machinery and affect the ease of excavation and grading.

Thin pan.—Depth to a thin cemented pan limits site preparation activities, such as shaping and leveling, and affects the ease and depth of excavation.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the potential for the caving of cutbanks. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table (saturation), flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the potential for the caving of cutbanks.

The management considerations for shallow excavations are as follows:

Caving potential.—Because of the texture of the soil, the potential for the caving of cutbanks is high. Extreme caution should be exercised around cutbanks to prevent injury resulting from cave-ins.

Bedrock (hard).—Shallow depth to hard bedrock limits site preparation and affects the ease of digging, filling, and compacting.

Bedrock (soft).—Shallow depth to soft bedrock limits site preparation and affects the ease of digging, filling, and compacting.

Fragments (greater than 3").—Rock fragments more than 3 inches in diameter impede the workability of the soil; affect the ease of digging, filling, and compacting; and restrict the use of heavy machinery.

Frequent or occasional flooding.—Flooding may restrict the periods when excavations can be made.

Organic matter (PT, OH, OL) below 20".—Soils in Unified class PT, OH, or OL have a high content of organic matter and low strength, which may influence the potential for the caving of cutbanks.

Pan (thick).—Depth to a thick cemented pan affects the ease of digging, filling, and compacting.

Pan (thin).—Depth to a thin cemented pan affects the ease of digging, filling, and compacting.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding restricts the installation and functioning of most land use applications and may limit the period when excavations can be made.

Saturation.—In areas of soils that have a water table at a shallow depth, the period when excavations can be made may be restricted. Such areas can become waterlogged and boggy during periods of heavy precipitation and are slow to drain.

Slope.—Steep slopes restrict the use of heavy machinery.

Sanitary Facilities

Tables 17a and 17b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *No limitations* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Limitations* with a value of more than 0.00 but less than 1.00 can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Limitations* with a value of 1.00 indicate that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00). Ratings of 0.00 are not displayed in the tables.

Table 17a

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability (Ksat), depth to a water table (saturation), ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

The management considerations for septic tank absorption fields are as follows:

Depth to bedrock.—The depth to bedrock affects the construction, installation, and functioning of septic tank absorption fields and affects other site applications. Shallow

soils have a limited absorption capacity and have biologically active zones through which waste materials can percolate. If these soils are used as filter fields, environmental and health risks should be considered.

Depth to pan.—Depth to a cemented pan affects the construction, installation, and functioning of septic tank adsorption fields and other site applications. Shallow soils have a limited absorption capacity and have biologically active zones through which waste materials can percolate. If these soils are used as filter fields, environmental and health risks should be considered.

Flooding, rare flooding, or very rare flooding.—Flooding can transport waste offsite and pollute surface waters. Flooding limits the use and management of the soil for sanitary facilities.

Fragments (greater than 3").—Rock fragments larger than 3 inches in diameter impede the workability of the soil and restrict the use of heavy machinery during construction of absorption fields.

Permeability greater than 6"/hr.—The soil horizon with the maximum Ksat governs the leaching and seepage potential of the soil. If this rate is high, the transmission of fluids through the soil is unimpeded and leaching and seepage may affect environmental, health, and performance considerations.

Permeability less than 0.6"/hr; permeability from 0.6 to 2"/hr.—The soil horizon with the minimum Ksat governs the rate of water movement through the whole soil. If this rate is low, the transmission of fluids into and through the soil is impeded and runoff, infiltration, and percolation of pollutants may affect environmental, health, and performance considerations.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding limits the installation and functioning of most land use applications.

Saturation.—Soils that have a water table at a shallow depth may become waterlogged during periods of heavy precipitation and are slow to drain. The contamination of ground water is a concern in areas of these soils.

Seepage in bottom layer.—The Ksat in the bottom layer of the soil governs the leaching and seepage potential of the soil. If this rate is high, the transmission of fluids through the soil and underlying materials is unimpeded. As a result, leaching and seepage may affect environmental, health, and performance considerations.

Slope.—Steep slopes affect the transmission of fluids through the soil. As a result, piping or seepage may affect environmental, health, and performance considerations.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, rock fragments larger than 3 inches in diameter, and content of organic matter.

Soil permeability (Ksat) is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and

the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

The management considerations for sewage lagoons are as follows:

Bedrock (hard).—Shallow depth to hard bedrock affects the construction, installation, and functioning of sewage lagoons.

Bedrock (soft).—Shallow depth to soft bedrock affects the construction, installation, and functioning of sewage lagoons.

Depth to pan.—Depth to a cemented pan affects the construction, installation, and functioning of sewage lagoons.

Flooding.—Flooding can transport waste offsite and pollute surface waters. Flooding limits the use and management of the soil for sanitary facilities.

Fragments (greater than 3").—Rock fragments larger than 3 inches in diameter impede the workability of the soil and restrict the use of heavy machinery.

Permeability greater than 2"/hr; permeability 0.6 to 2"/hr.—The soil horizon with the maximum Ksat governs the leaching and seepage potential of the soil. If this rate is high, the transmission of fluids through the soil is unimpeded and leaching and seepage may affect environmental, health, and performance considerations.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding limits the installation and functioning of most land use applications.

Saturation.—Soils that have a water table at a shallow depth may become waterlogged during periods of heavy precipitation and are slow to drain. The contamination of ground water is a concern in areas of these soils.

Slope.—Steep slopes impede site preparation and construction and restrict the size and shape of the lagoon.

Table 17b

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and cobbles, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, fractured bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

The management considerations for trench sanitary landfills are as follows:

Clay or silty clay; clay loam, silty clay, silty clay loam.—Clayey soils may become sticky when wet and are difficult to spread and compact. This condition is only partially restrictive if the clay mineralogy is kaolinitic.

Depth to thin cemented pan.—Depth to a cemented pan may limit the construction of the landfill and can affect environmental and health considerations.

Flooding.—Flooding can transport agricultural waste offsite and pollute surface waters. Flooding limits the use and management of the soil for sanitary facilities.

Fragments (3-10").—Cobbles (rock fragments 3 to 10 inches in diameter) impede the workability of the soil and restrict the use of heavy machinery. They also affect site reclamation.

Lithic or paralithic bedrock.—Shallow soils have a limited absorption capacity and have biologically active zones through which waste materials can percolate. If these soils are used as sites for trench sanitary landfills, environmental and health risks should be considered.

Organic matter.—Soils in Unified class PT, OH, or OL have a high content of organic matter and low strength, which may affect the use of heavy machinery.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding limits the installation and functioning of most land use applications.

Sandy textures.—Sandy soils are subject to caving and are droughty. The establishment of vegetative cover is difficult in areas of these soils.

Saturation.—Soils that have a water table at a shallow depth may become waterlogged during periods of heavy precipitation and are slow to drain. The contamination of ground water is a concern in areas of these soils.

Seepage in bottom layer.—The Ksat in the bottom layer of the soil governs the leaching and seepage potential of the soil. If this rate is high, the transmission of fluids through the soil and underlying materials is unimpeded. As a result, leaching and seepage may affect environmental, health, and performance considerations.

Slope.—Steep slopes affect the transmission of fluids through the soil. As a result, piping or seepage may affect environmental, health, and performance considerations.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability (Ksat), depth to a water table (saturation), ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

The management considerations for area sanitary landfills are as follows:

Bedrock depth.—Shallow depth to bedrock may restrict the construction and installation of the landfill and can result in environmental and health risks.

Depth to pan.—Depth to a cemented pan may restrict the construction and installation of the landfill and can result in environmental and health risks.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding limits the installation and functioning of most land use applications.

Saturation.—Soils that have a water table at a shallow depth may become waterlogged during periods of heavy precipitation and are slow to drain. The contamination of ground water is a concern in areas of these soils.

Seepage.—The soil horizon with the maximum Ksat governs the leaching and seepage potential of the soil. If this rate is high, the transmission of fluids into and through the soil is unimpeded. As a result, leaching and seepage may affect environmental, health, and performance considerations.

Slope.—Steep slopes impede the use of heavy machinery and can limit the reclamation of borrow sites.

Very rare flooding, rare flooding, occasional flooding, frequent flooding.—Flooding can transport waste offsite and pollute surface waters. Flooding limits the use and management of the soil for sanitary facilities.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

The management considerations affecting daily cover for landfill are as follows:

Depth to bedrock.—The depth to bedrock limits the volume of material suitable for use as landfill cover. Reclamation and revegetation also are difficult in areas of shallow soils.

Depth to pan.—Depth to a cemented pan limits the volume of material suitable for use as landfill cover. Reclamation and revegetation also are difficult in areas of shallow soils.

Fragments (greater than 3").—Rock fragments larger than 3 inches in diameter impede the workability of the soil and restrict the use of heavy machinery. They also affect site reclamation.

Fragments (less than 75 mm).—A high content of gravel (rock fragments less than 75 mm in diameter) may impede the workability of the soil and restrict the use of heavy machinery. It can also affect site reclamation.

Organic matter.—Soils in Unified class PT have a high content of organic matter and low strength and are hard to reclaim.

Packing.—Soils in Unified classes MH, OL, OH, or CH are hard to pack. This condition is only partially restrictive if the clay mineralogy is kaolinitic.

Permeability (Ksat).—A high Ksat results in unimpeded water movement through the soil. As a result, seepage and/or leaching may be a concern.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding limits the installation and functioning of most land use applications.

Sandy textures.—Sandy soils may be subject to soil blowing and are droughty. The establishment of vegetative cover is difficult in areas of these soils.

Saturation.—Shallow depth to a water table limits the volume of material suitable for use as landfill cover. Reclamation and revegetation also are difficult in areas of shallow soils, and contamination from leaching may be a concern.

Silty clay or clay; silt or clay textures; clay loam, silty clay, silty clay loam.—Soils that have a high content of silt or clay may become sticky when wet and are difficult to spread and compact.

Slope.—Steep slopes impede the use of heavy machinery and can limit the reclamation of borrow sites.

Construction Materials

Tables 18a and 18b give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

Table 18a

Gravel and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 18a, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The numbers 0.00 to 0.07 indicate that the layer is a poor source. The numbers 0.75 to 1.00 indicate that the layer is a good source.

The soils are rated *good, fair,* or *poor* as potential sources of topsoil. The features that limit the soils as sources of this material are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as a source of topsoil. The lower the number, the greater the limitation.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Management considerations that affect the potential of the soils as a source of topsoil are as follows:

Clay.—Clayey soils become sticky when wet and have poor tilth. If these soils are used as a source of topsoil, controlling compaction, proper seedbed preparation, and establishing new growth are difficult.

Depth to bedrock.—The depth to bedrock limits the volume of material suitable for use as topsoil or for reclamation.

Depth to pan.—Depth to a cemented pan limits the volume of material suitable for use as topsoil or for reclamation.

EC (electrical conductivity).—In soils with high salinity, plant growth may be restricted and reestablishing vegetation is difficult.

Hard to reclaim.—Because of shallow depth to layers with high bulk density, revegetation and reclamation are difficult. These layers have a low available water capacity and restricted percolation rates. Also, soils that have rock fragments are hard to reclaim. The rock fragments interfere with grading, seeding, germination, and plant growth.

OM.—Soils that have a high content of organic matter have low strength and are difficult to reclaim.

pH.—In soils that have low pH, plant growth is restricted and reestablishing vegetation is difficult.

Rock fragment content.—Rock fragments in the soil interfere with grading, seeding, germination, and plant growth.

Sand fractions.—In soils that have a thick sandy layer with a low content of clay, revegetation is difficult. Also, wind erosion is a hazard in areas of these soils.

SAR.—In soils with a high sodium adsorption ratio, plant growth is restricted and reestablishing vegetation is difficult.

Saturation; no saturated zone.—Shallow depth to a water table can limit the volume of material suitable for use as topsoil. Reclamation and revegetation may be difficult. The soils are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes restrict the use of heavy machinery and affect the reclamation of borrow sites.

Table 18b

The soils are rated *good, fair,* or *poor* as potential sources of reclamation material and roadfill. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material or roadfill. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Management considerations that affect the potential of the soils as a source of reclamation material are as follows:

AWC.—The available water capacity affects plant growth and the establishment of grasses, shrubs, and trees.

Calcium carbonates.—A high content of calcium carbonate may limit the growth of some plant species.

Clay.—Clayey soils may become sticky when wet and are difficult to spread and compact.

Depth to pan.—Depth to a cemented pan limits the volume of material suitable for reclamation.

Fragments 3-10".—An excessive content of cobbles (rock fragments 3 to 10 inches in diameter) in the upper 72 inches (180 cm) of the soil can interfere with the use of construction equipment.

Fragments greater than 10".—An excessive content of stones or boulders (rock fragments more than 10 inches in diameter) in the upper 72 inches (180 cm) of the soil can interfere with the use of construction equipment.

K factor.—Soils that have a high K factor are subject to water erosion if they are used as a source of reclamation material. Measures that help to control water erosion are needed.

Maximum pH greater than 8.5.—In soils with high pH, plant growth is restricted and reestablishing vegetation is difficult.

OM.—Soils that have a low content of organic matter have poor tilth and inherent fertility problems. Additions of organic material may be needed.

pH is between 4 and 6.5 above 40".—In soils that have low pH, plant growth is restricted and reestablishing vegetation is difficult.

Sand fractions.—In soils that have a thick sandy layer with a low content of clay, revegetation is difficult. Also, wind erosion is a hazard in areas of these soils.

SAR.—In soils with a high sodium adsorption ratio, plant growth is restricted and reestablishing vegetation is difficult in disturbed areas.

WEG.—Soils in wind erodibility groups 1 through 3 are susceptible to wind erosion. Measures that help to control wind erosion are needed.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Management considerations that affect the potential of the soils as a source of roadfill are as follows:

AASHTO GIN.—Soils with a high AASHTO group index number have low strength, which affects the traffic-supporting capacity of the soil and reduces the potential of the soil as a source of roadfill. This condition is only partially restrictive if the clay mineralogy is kaolinitic.

Depth to bedrock.—The depth to bedrock limits the volume of material suitable for use as roadfill.

Depth to pan.—Depth to a cemented pan limits the volume of material suitable for use as roadfill.

Fragments greater than 3".—Rock fragments more than 3 inches in diameter can interfere with the use of construction equipment and can hinder grade stabilization.

LEP (shrink-swell).—Excessive shrinking and swelling can result in the shifting of roads and the cracking of pavement.

Saturation; no saturated zone.—Shallow depth to a water table can limit the volume of material suitable for use as roadfill. Reclamation and revegetation may be difficult. The soils are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Slope.—Steep slopes restrict the use of heavy machinery and affect the reclamation of borrow sites.

Water Management

Table 19a, 19b, and 19c provide information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and five irrigation design systems. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *No limitations* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Limitations* with values between 0.00 and 1.00 can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Limitations* with a value of 1.00 indicate that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Table 19a

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Management considerations affecting pond reservoir areas are as follows.

Depth to bedrock.—Shallow depth to bedrock limits site preparation, the depth of the reservoir, and pond maintenance.

Depth to pan.—Shallow depth to a cemented pan limits site preparation, the depth of the reservoir, and pond maintenance.

Permeability (Ksat).—The soil horizon with the maximum Ksat governs the seepage potential of the soil. If this rate is high, the transmission of fluids into and through the soil is unimpeded and seepage may be a concern.

Slope.—Steep slopes impede site preparation and construction and restrict the size and shape of the reservoir.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Management considerations affecting embankments, dikes, and levees are as follows.

Fragments (greater than 3").—Rock fragments more than 3 inches in diameter impede the workability of the soil, restrict the use of heavy machinery, and affect site reclamation. A high content of rock fragments may also unfavorably affect efforts to compact the soil.

Organic matter.—Soils in Unified class PT, OL, or OH have a high content of organic matter and low strength and are hard to reclaim.

Piping potential.—Fine textured soils that have a high content of sodium and gypsum and low cohesion and liquid limit are subject to piping.

Ponding.—Ponding is the condition where standing water is on the soil surface for any period of time. Ponding limits the timing of installation of embankments, dikes, or levees.

Saturation.—Shallow depth to a water table limits the reclamation and revegetation of the soils. The soils are slow to drain and can become waterlogged and boggy during periods of heavy precipitation.

Seepage.—Soils that have gravel or sand in the bottom layer or thickest layer are subject to seepage.

Shrink-swell; MH or CH Unified.—Fine textured soils with a high plasticity index and liquid limit are difficult to compact. Soils that have a high shrink-swell potential tend to crack as they dry.

Thin layer.—Shallow depth to a cemented restrictive layer limits the amount of source material available for constructing dikes, levees, or water-retention embankments.

Table 19b

Basin or paddy irrigation systems are generally used for paddy irrigation for rice. They require considerable land preparation. Soil properties affecting the performance of these systems are similar to those listed for graded border systems. Where rice is grown, however, slow water movement, ponding, and clayey textures are not limitations.

Graded border irrigation systems are methods of surface irrigation best adapted to grain and forage crops. Borders are divided by levees running down the slope at uniform spacings. Soil properties affecting the performance of graded border irrigations systems include sandy textures, slope, rock fragments on the surface, slow water movement, and a shallow depth to a cemented pan or bedrock.

Table 19c

Sprinkler irrigation systems vary in shape, size, and design, depending on crop needs and soil type. These systems can perform over a wider range of soils than border irrigation systems. Most systems can perform on slopes up to about 15 percent. Ponding, erodibility of the surface layer, and depth to a cemented pan or bedrock are typical factors affecting design and performance of the system.

Drip or trickle irrigation systems are very efficient and are most economical for widely spaced crops, such as trees and vines. Slope is generally not a limitation, and the movement of water through the soil can be controlled by application rates. Soil texture, water movement through the soil, rock fragments on the surface, and available water-holding capacity are less limiting for these systems than for other systems.

Furrow irrigation systems are among the oldest irrigation methods. They require efficient management. A furrow is a small, shallow channel installed down or across the slope of the field. The furrow length should be determined by soil type and slope. Furrows running downslope contribute to soil erosion. Soil texture, erodibility, and depth to a cemented pan or bedrock are typical factors affecting performance and maintenance of the system.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 20 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group

index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

No estimates are made for liquid limit, plasticity index, and Unified and AASHTO classifications for soils with medial or ashy texture modifiers because there is no ASTM procedure for soils with andic soil propeties. The USDA texture is the apparent field texture.

Physical Properties

Tables 21 and 22 show estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Table 21

Depth to the upper and lower boundaries of each layer is indicated.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Saturated hydraulic conductivity refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (Ksat). The estimates in the table indicate the rate of water movement, in micrometers per second (um/sec), when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic

matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Table 22

Depth to the upper and lower boundaries of each layer is indicated.

Erosion factors are shown in table 22 as the K factor (K and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the “National Soil Survey Handbook” (USDA/NRCS).

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 23 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area.

The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

Physical and Chemical Analyses of Selected Soils

The results of physical and chemical analyses of several typical pedons in the survey area are available on the Internet (http://ssldata.nrcs.usda.gov/querypage.asp). The data are for soils sampled at carefully selected sites. Unless otherwise indicated, the pedons are typical of the series. The following is a list of soil samples analyzed by the National Soil Survey Laboratory in Lincoln, Nebraska.

Correlated soil name: Almendra
Pedon number: 95P0513
Site ID: 95CA612004
Latitude: 39-40-25.00N

Longitude: 121-48-40.00W
Datum: NAD27
Location notes: Approximately 2,300 feet north and 2,100 feet west of the southeast corner of sec. 13, T. 21 N., R. 1 E.; about 2.0 miles north of Durham; Chico, California, Quad.
Correlated soil name: Beecee
Pedon number: 96P0141
Site ID: 615-H
Latitude: 39-57-44.82N
Longitude: 121-31-5.65W
Datum: NAD27
Location notes: Approximately 1,500 feet north and 850 feet east of the southwest corner of sec. 3, T. 24 N., R. 4 E.; about 2.2 miles southeast of Inskip; Stirling City, California, Quad.
Correlated soil name: Bigridge
Pedon number: 01N0268
Site ID: 716-L
Latitude: 39-36-41.47N
Longitude: 121-24-51.65W
Datum: NAD83
Location notes: Approximately 1,300 feet west and 750 feet south of the northeast corner of sec. 9, T. 20 N., R. 5 E.; about 6.25 miles northeast of Oroville Dam; Oroville Dam, California, Quad.
Correlated soil name: Bonepile
Pedon number: 97P0308
Site ID: 670-I
Latitude: 40-1-57.00N
Longitude: 121-31-35.30W
Datum: NAD83
Location notes: Approximately 600 feet north and 1,200 feet west of the southeast corner of sec. 9, T. 25 N., R. 4 E.; Butte Meadows, California, Quad.
Correlated soil name: Bonneyridge
Pedon number: 96P0134
Site ID: 823-Y
Latitude: 39-38-50.0N
Longitude: 121-10-49.0W
Datum: NAD27
Location notes: Approximately 2,600 feet east and 1,800 feet north of the southwest corner of sec. 27, T. 21 N., R. 7 E.; Cascade California, Quad.
Correlated soil name: Bonneyridge
Pedon number: 97P0311
Site ID: 709-K
Latitude: 39-40-26.80N
Longitude: 121-8-0.20W
Datum: NAD83
Location notes: Approximately 1,100 feet north and 650 feet east of the southwest corner of sec. 18, T. 21 N., R. 8 E.; about 3 miles southeast of Cascade; Cascade, California, Quad.
Correlated soil name: Bottlehill
Pedon number: 97P0307
Site ID: 674-I
Latitude: 40-1-18.00N
Longitude: 121-32-9.50W
Datum: NAD83

Location notes: Approximately 1,850 feet north and 1,350 feet east of the southwest corner of sec. 16, T. 25 N., R. 4 E.; Butte Meadows, California, Quad.

Correlated soil name: Busacca
Pedon number: 89P0067
Site ID: 127-56-2
Latitude: 39-47-47.00N
Longitude: 121-58-27.00W
Datum: NAD27
Location notes: Nord, California, Quad.

Correlated soil name: Cerpone
Pedon number: 98P0294
Site ID: 625I
Latitude: 39-49-23.54N
Longitude: 121-32-29.94W
Datum: NAD83
Location notes: Approximately 2,150 feet south and 250 feet east of the northwest corner of sec. 28, T. 23 N., R. 4 E.; about 1.2 miles northeast of Sawmill Peak; Paradise East, California, Quad.

Correlated soil name: Cherotable
Pedon number: 01N0260
Site ID: 551X
Latitude: 39-35-54.71N
Longitude: 121-32-29.4W
Datum: NAD83
Location notes: Approximately 660 feet west and 140 feet north of the southeast corner of sec. 8, T. 20 N., R. 4 E.; about 5 miles north of Oroville; Oroville, California, Quad.

Correlated soil name: Chico
Pedon number: 95P0515
Site ID: 95CA612018
Latitude: 39-42-2.00N
Longitude: 121-49-27.00W
Datum: NAD27
Location notes: Approximately 1,500 feet north and 125 feet east of the southeast corner of sec. 2, T. 21 N., R. 1 E.; about 1 mile south of Chico; 200 feet northeast of modal site; Chico, California, Quad.

Correlated soil name: Coonhollow
Pedon number: 01N0261
Site ID: 552W
Latitude: 39-35-17.55N
Longitude: 121-34-15.48W
Datum: NAD83
Location notes: Approximately 1,750 feet east and 1,800 feet north of the southwest corner of sec. 18, T. 20 N., R. 4 E.; about 5.1 miles north of downtown Oroville; Oroville, California, Quad.

Correlated soil name: Craigsaddle
Pedon number: 01N0269
Site ID: 715-Q
Latitude: 39-32-49.30N
Longitude: 121-22-58.50W
Datum: NAD83
Location notes: Approximately 2,150 feet east and 2,000 feet north of the southwest corner of sec. 35, T. 20 N., R. 5 E.; about 2.5 miles east of Bidwell Bar Bridge; Oroville Dam, California, Quad.

Correlated soil name: Dixmine
Pedon number: 98P0292
Site ID: 690J
Latitude: 39-57-49.77N
Longitude: 121-37-52.52W
Datum: NAD83
Location notes: Approximately 1,500 feet north and 1,500 feet east of the southwest corner of sec. 3, T. 24 N., R. 3 E.; Cohasset, California, Quad.
Correlated soil name: Doemill
Pedon number: 01N0255
Site ID: 614-J
Latitude: 39-51-3.57N
Longitude: 121-51-54.65W
Datum: NAD83
Location notes: Approximately 1,600 feet south and 750 feet west of the northeast corner of sec. 16, T. 23 N., R. 1 E.; about 0.7 mile north of Rock Creek Road and about 2.8 miles east of Meridian Road; Richardson Springs, California, Quad.
Correlated soil name: Esquon
Pedon number: 95P0511
Site ID: 95CA612002
Latitude: 39-29-36.00N
Longitude: 121-43-4.00W
Datum: NAD27
Location notes: Approximately 2,150 feet east and 100 feet south of the northwest corner of sec. 23, T. 19 N., R. 2 E.; Biggs, California, Quad.
Correlated soil name: Farwell
Pedon number: 89P0068
Site ID: 127-56-9
Latitude: 39-47-39.00N
Longitude: 121-58-56.00W
Datum: NAD27
Location notes: Unsectionized; about 1.9 miles northwest of Nord; Nord, California, Quad.
Correlated soil name: Gianella
Pedon number: 89P0070
Site ID: 439-24-9
Latitude: 39-48-13.00N
*Longitude:*122-3-19.00W
Datum: NAD27
Location notes: About 5.7 miles northwest of Nord, on Snaden Island; approximately 2,700 feet west and 400 feet south of the west end of Bennett Road; unsectionized; Foster Island, California, Quad.
Correlated soil name: Griffgulch
Pedon number: 98P0291
Site ID: 625K
Latitude: 39-47-27.10N
Longitude: 121-33-3.10W
Datum: NAD83
Location notes: Approximately 2,150 feet north and 2,050 feet west of the southeast corner of sec. 5, T. 22 N., R. 4 E.; Paradise East, California, Quad.
Correlated soil name: Jocal taxadjunct
Pedon number: 96P0133
Site ID: 821-Q

Latitude: 39-37-50.50N
Longitude: 121-10-38.00W
Datum: NAD27
Location notes: SW¼SE¼ sec. 34, T. 21 N., R. 7 E.; Cascade, California, Quad.
Correlated soil name: Jokerst
Pedon number: 01N0256
Site ID: 615-J
Latitude: 39-51-3.18N
Longitude: 121-51-54.71W
Datum: NAD83
Location notes: Approximately 1,625 feet south and 775 feet west of the northeast corner of sec. 16, T. 23 N., R. 1 E.; about 0.7 mile north of Rock Creek Road and about 2.8 miles east of Meridian Road; Richardson Springs, California, Quad.
Correlated soil name: Lavatop
Pedon number: 96P0135
Site ID: 821-H
Latitude: 39-37-45.80N
Longitude: 121-8-54.00W
Datum: NAD27
Location notes: Approximately 1,250 feet east and 250 feet north of the southwest corner of sec. 36, T. 21 N., R. 7 E.; about 6.1 miles east of Camp Eighteen; Cascade, California, Quad.
Correlated soil name: Lewisflat
Pedon number: 96P0142
Site ID: 706-A
Latitude: 39-34-47.50N
Longitude: 121-6-37.50W
Datum: NAD83
Location notes: Approximately 1,400 feet east and 2,000 feet south of the northwest corner of sec. 20, T. 20 N., R. 8 E.; about 1.1 miles north of Strawberry Valley; Strawberry Valley, California, Quad.
Correlated soil name: Llanoseco
Pedon number: 95P0517
Site ID: 95CA612020
Latitude: 39-35-30.00N
Longitude: 121-56-46.00W
Datum: NAD27
Location notes: Unsectionized; 20,370 feet north and 700 feet east of the northwest corner at modal site, sec. 2, T. 19 N., R. 1 W., Llanoseco Sanctuary #1, Field T1; Llano Seco, California, Quad.
Correlated soil name: Loafercreek
Pedon number: 01N0266
Site ID: 716Q
Latitude: 39-31-8.28N
Longitude: 121-26-28.49W
Datum: NAD83
Location notes: Approximately 427 meters east and 747 meters south of the northwest corner of sec. 8, T. 19 N., R. 5 E.; Oroville State Recreation Area, Loafercreek, about 7,200 meters northeast of Wyandotte; Oroville Dam, California, Quad.
Correlated soil name: Loafercreek
Pedon number: 01N0263
Site ID: 300J

Latitude: 39-26-41.87N
Longitude: 121-26-12.47W
Datum: NAD83
Location notes: Approximately 2,350 feet east and 2,100 feet north of the southwest corner of sec. 5, T. 18 N., R. 5 E.; about 3.3 miles southeast of Wyandotte; Bangor, California, Quad.

Correlated soil name: Loemstone
Pedon number: 95P0514
Site ID: 95CA612005
Latitude: 39-20-2.00N
Longitude: 121-40-0.00W
Datum: NAD27
Location notes: About 2 miles southeast of Gridley, approximately 475 feet east and 220 feet south of the intersection of Evans Reimer Road and Cowee Avenue; in an unsectionized area in the Boga Land Grant; Gridley, California, Quad.

Correlated soil name: Lofgren
Pedon number: 95P0510
Site ID: 95CA612001
Latitude: 39-28-2.00N
Longitude: 121-49-4.00W
Datum: NAD27
Location notes: Approximately 200 feet east and 1,000 feet north of the southwest corner of sec. 25, T. 19 N., R. 1 E.; about 4.2 miles southwest of Richvale; West of Biggs, California, Quad.

Correlated soil name: Lydon
Pedon number: 96P0137
Site ID: 611H
Latitude: 39-58-30.30N
Longitude: 121-36-30.40W
Datum: NAD27
Location notes: About 0.6 mile southeast of Ewalt Camp, approximately 2,100 feet east and 350 feet north of the northwest corner of sec. 2, T. 24 N., R. 3 E.; in an unsectionized area; Stirling City, California, Quad.

Correlated soil name: Mounthope
Pedon number: 01N0267
Site ID: 720-F
Latitude: 39-36-34.15N
Longitude: 121-27-33.20W
Datum: NAD83
Location notes: Approximately 1,600 feet east and 1,050 feet south of the northwest corner of sec. 7, T. 20 N., R. 5 E.; about 5.1 miles northeast of Oroville Dam; Oroville Dam, California, Quad.

Correlated soil name: Mountyana
Pedon number: 96P0136
Site ID: 610-H
Latitude: 39-58-26.40N
Longitude: 121-36-7.20W
Datum: NAD27
Location notes: Approximately 100 feet south and 1,500 feet west of the northeast corner of sec. 2, T. 24 N., R. 3 E.; about 1 mile east-southeast of Ewalt Camp; Stirling City, California, Quad.

Correlated soil name: Mudwash
Pedon number: 98P0288

Site ID: 713-O
Latitude: 39-41-9.30N
Longitude: 121-9-21.90W
Datum: NAD83
Location notes: Approximately 450 feet west and 500 feet south of the northeast corner of sec. 14, T. 21 N., R. 7 E.; about 1.6 miles southeast of Cascade; Cascade, California, Quad.

Correlated soil name: Neerdobe
Pedon number: 95P0512
Site ID: 95CA612003
Latitude: 39-30-48.00N
Longitude: 121-47-30.00W
Datum: NAD27
Location notes: Approximately 800 feet south of the center of sec. 7, modal site, T. 19 N., R. 2 E.; Nelson, California, Quad.

Correlated soil name: Obstruction
Pedon number: 96P0140
Site ID: 614-H
Latitude: 39-57-43.20N
Longitude: 121-32-37.00W
Datum: NAD27
Location notes: Approximately 1,350 feet north and 1,100 feet west of the southeast corner of sec. 5, T. 24 N., R. 4 E.; about 1 mile south-southwest of Inskip Cemetery; Stirling City, California, Quad.

Correlated soil name: Paradiso
Pedon number: 97P0306
Site ID: 616-I
Latitude: 39-47-13.60N
Longitude: 121-35-24.20W
Datum: NAD83
Location notes: $SW^1/_4SE^1/_4SW^1/_4$ sec. 1, T. 22 N., R. 3 E.; about 150 feet northwest of CDF office, 20 feet south of fence and park; Paradise East, California, Quad.

Correlated soil name: Parrott
Pedon number: 89P0069
Site ID: 439-24-17
Latitude: 39-48-13.00N
Longitude: 122-1-23.00W
Datum: NAD27
Location notes: Approximately 2,200 feet north and 1,700 feet east of the intersection of T. 22 N. and 23 N. and R. 1 W. and 2 W.; about 3.8 miles northeast of Nord; Foster Island, California, Quad.

Correlated soil name: Powderhouse
Pedon number: 97P0309
Site ID: 709-H
Latitude: 39-41-23.90N
Longitude: 121-6-25.30W
Datum: NAD83
Location notes: Approximately 1,900 feet west and 1,850 feet north of the southeast corner of sec. 8, T. 21 N., R. 8 E.; about 2 miles south of Camel Peak Lookout; American House, California, Quad.

Correlated soil name: Powellton
Pedon number: 96P0144
Site ID: 704-R
Latitude: 39-33-43.00N

Longitude: 121-9-15.00W
Datum: NAD27
Location notes: Approximately 2,000 feet west and 3,000 feet south of the northeast corner of sec. 26, T. 20 N., R. 7 E.; about 1.9 miles north of Clipper Mills; Clipper Mills, California, Quad.

Correlated soil name: Powellton
Pedon number: 96P0138
Site ID: 612-H
Latitude: 39-54-59.70N
Longitude: 121-34-34.70W
Datum: NAD27
Location notes: Approximately 800 feet south and 400 feet east of the northwest corner of sec. 31, T. 24 N., R. 4 E.; about 0.5 mile north of Lovelock; Stirling City, California, Quad.

Correlated soil name: Redbone
Pedon number: 98P0293
Site ID: 679J
Latitude: 40-2-20.64N
Longitude: 121-35-1.02W
Datum: NAD83
Location notes: About 1,600 feet west and 2,400 feet north of the southwest corner of sec. 7, T. 25 N., R. 3 E. (unsectionized); Mt. Diablo meridian; Butte Meadows, California, Quad.

Correlated soil name: Rogerville
Pedon number: 96P0132
Site ID: 825-P
Latitude: 39-37-46.00N
Longitude: 121-11-6.00W
Datum: NAD27
Location notes: Approximately 1,400 feet east and 100 feet north of the southwest corner of sec. 34, T. 21 N., R. 7 E.; about 4.2 miles northeast of Featherfalls; Cascade, California, Quad.

Correlated soil name: Series not designated
Pedon number: 01N0262
Site ID: 300W
Latitude: 39-28-20.92N
Longitude: 121-26-20.58W
Datum: NAD27
Location notes: Approximately 594 meters east and 625 meters north of the southwest corner of sec. 29, T. 19 N., R. 5 E.; Gilbert Ranch; about 213 meters from the trail crossing North Huncut Creek, heading in a southeasterly direction, and about 61 meters northeast of the trail.; Bangor, California, Quad.

Correlated soil name: Series not designated
Pedon number: 98P0286
Site ID: 712-L
Latitude: 39-43-29.10N
Longitude: 121-3-41.60W
Datum: NAD83
Location notes: Approximately 750 feet east and 2,000 feet south of the northwest corner of sec. 35, T. 22 N., R. 8 E.; about 2.2 miles northeast of Camel Peak Lookout; American House, California, Quad.

Correlated soil name: Series not designated
Pedon number: 01N0264
Site ID: 303F

Latitude: 39-24-1.18N
Longitude: 121-21-46.71W
Datum: NAD83
Location notes: Approximately 1,400 feet north and 3,200 feet west of the southeast corner of sec. 24, T. 18 N., R. 5 E.; about 4.9 miles northeast of Bangor; Rackerby, California, Quad.

Correlated soil name: Series not designated
Pedon number: 01N0265
Site ID: 301P
Latitude: 39-29-4.43N
Longitude: 121-23-41.42W
Datum: NAD83
Location notes: Approximately 457 meters west and 152 meters north of the southeast corner of sec. 22, T. 19 N., R. 5 E.; about 1,128 meters west and 122 meters south of the Hurleton-Swedes Flat and Phoenix Mine Road intersection; Bangor, California, Quad.

Correlated soil name: Series not designated
Pedon number: 98P0290
Site ID: 712-V
Latitude: 39-44-6.00N
Longitude: 121-6-48.00W
Datum: NAD83
Location notes: Approximately 1,200 feet east and 1,950 feet north of the southwest corner of sec. 29, T. 22 N., R. 8 E.; about 1.2 miles northwest of Camel Peak Lookout; American House, California, Quad.

Correlated soil name: Series not designated
Pedon number: 01N0269
Site ID: 712-Q
Latitude: 39-41-55.20N
Longitude: 121-4-47.30W
Datum: NAD83
Location notes: Approximately 700 feet east and 900 feet south of the northwest corner of sec. 10, T. 21 N., R. 8 E.; about 1.9 miles southeast of Camel Peak Lookout; American House, California, Quad.

Correlated soil name: Series not designated
Pedon number: 96P0143
Site ID: 706-F
Latitude: 39-32-17.50N
Longitude: 121-12-52.00W
Datum: NAD27
Location notes: Clipper Mills, California, Quad.

Correlated soil name: Shakeridge
Pedon number: 97P0310
Site ID: 708-K
Latitude: 39-40-29.70N
Longitude: 121-8-57.50W
Datum: NAD83
Location notes: Approximately 1,250 feet north and 1,200 feet east of the southwest corner of sec. 13, T. 21 N., R. 7 E.; about 2.3 miles southeast of Cascade; Cascade, California, Quad.

Correlated soil name: Stagpoint
Pedon number: 98P0287
Site ID: 712-K

Latitude: 39-43-22.50N
Longitude: 121-3-55.80W
Datum: NAD83
Location notes: Approximately 300 feet west and 2,550 feet south of the northeast corner of sec. 34, T. 22 N., R. 8 E.; about 2 miles east of Camel Peak Lookout; American House, California, Quad.

Correlated soil name: Subaco taxadjunct
Pedon number: 89P0071
Site ID: 127-33-9A
Latitude: 39-18-26.00N
Longitude: 121-47-52.00W
Datum: NAD27
Approximately 1,200 feet north and 200 feet west of the southeast corner of sec. 24, T. 17 N., R. 1 E.; about 1.1 miles northwest of Pennington; Pennington, California, Quad.

Correlated soil name: Toadtown
Pedon number: 96P0130
Site ID: 826-W
Latitude: 39-36-15.00N
Longitude: 121-14-13.00W
Datum: NAD27
Location notes: SW¼SW¼ sec. 7, T. 20 N., R. 7 E.; Clipper Mills, California, Quad.

Correlated soil name: Toadtown
Pedon number: 96P0131
Site ID: 825-N
Latitude: 39-36-50.80N
Longitude: 121-11-44.10W
Datum: NAD27
Location notes: SE¼SW¼ sec. 4, T. 20 N., R. 7 E.; Clipper Mills, California, Quad.

Correlated soil name: Toadtown
Pedon number: 96P0139
Site ID: 613-H
Latitude: 39-55-0.70N
Longitude: 121-34-57.98W
Datum: NAD27
Location notes: Approximately 600 feet north and 1,500 feet west of the southeast corner of sec. 24, T. 24 N., R. 3 E.; about 1 mile southwest of Powellton; Stirling City, California, Quad.

Correlated soil name: Ultic Haploxeralfs, thermic
Pedon number: 01N0257
Site ID: 622N
Latitude: 39-41-59.87N
Longitude: 121-41-4.94W
Datum: NAD83
Location notes: Approximately 1,700 feet south and 200 feet west of the center of sec. 6, T. 21 N., R. 3E.; about 0.75 mile west of Elliot Spring House and 0.2 mile south of Neal Road; Hamlin Canyon, California, Quad.

Correlated soil name: Ultic Haploxeralfs, thermic
Pedon number: 01N0258
Site ID: 678L
Latitude: 39-46-39.06N
Longitude: 121-43-57.69W
Datum: NAD83

Location notes: Approximately 2,400 feet east and 150 feet north of the center of sec. 10, T. 22 N., R. 2 E.; about 1.05 miles north of the intersection of the upper end of Humbolt Road and Highway 32 and 200 feet west of Highway 32; Paradise West, California, Quad.

Correlated soil name: Ultic Haploxeralfs, mesic

Pedon number: 01N0259
Site ID: 676M
Latitude: 39-48-15.06N
Longitude: 121-40-28.56W
Datum: NAD83
Location notes: Approximately 1,850 feet north and 300 feet east of the southwest corner of sec. 32, T. 23 N., R. 3 E.; about 850 feet north-northwest of Doe Mill Point; Paradise West, California, Quad.

Correlated soil name: Whitecabin

Pedon number: 95P0516
Site ID: 723R
Latitude: 39-35-57N
Longitude: 121-56-48W
Datum: NAD27
Location notes: About 1.7 miles southeast of Rancho Llano Seco headquarters, approximately 8,500 feet west of the Mt. Diablo meridian and 14,500 feet south of the boundary between T. 20 N. and 21 N.; in an unsectionized area in the Llano Seco Land Grant; Llano Seco, California, Quad.

Most determinations, except those for grain-size analysis and bulk density, were made on soil material smaller than 2 millimeters in diameter. Measurements reported as percent or quantity of unit weight were calculated on an ovendry basis. The methods used in obtaining the data are indicated in the list that follows. The codes in parentheses refer to published methods (USDA, 2004).

Coarse materials—(2-75 mm fraction) weight estimates of the percentages of all material less than 75 mm (3B1).
Coarse materials—(2-250 mm fraction) volume estimates of the percentages of all material greater than 2 mm (3B2).
Sand—(0.05-2.0 mm fraction) weight percentages of material less than 2 mm (3A1).
Silt—(0.002-0.05 mm fraction) pipette extraction, weight percentages of all material less than 2 mm (3A1).
Clay—(fraction less than 0.002 mm) pipette extraction, weight percentages of material less than 2 mm (3A1).
Carbonate clay—(fraction less than 0.002 mm) pipette extraction, weight percentages of material less than 2 mm (3A1d).
Water retained—pressure extraction, percentage of ovendry weight of less than 2 mm material; 1/3 or 1/10 bar (4B1), 15 bars (4B2).
Water-retention difference—between 1/3 bar and 15 bars for whole soil (4C1).
Water-retention difference—between 1/10 bar and 15 bars for whole soil (4C2).
Bulk density—of less than 2 mm material, saran-coated clods field moist (4A1a), 1/3 bar (4A1d), ovendry (4A1h).
Moist bulk density—of less than 2 mm material, cores (4A3).
Moist bulk density—of less than 2 mm material, compliant cavity (4A5).
Linear extensibility—change in clod dimension based on whole soil (4D).
Organic carbon—wet combustion. Walkley-Black modified acid-dichromate, ferric sulfate titration (6A1c).
Organic carbon—dry combustion (6A2d).

Total nitrogen—Kjeldahl (6B3).
Extractable cations—ammonium acetate pH 7.0, ICP; calcium (6N2i), magnesium (6O2h), sodium (6P2f), potassium (6Q2f).
Extractable cations—ammonium acetate pH 7.0, EDTA-alcohol separation; calcium (6N2a), magnesium (6O2a); flame photometry; sodium (6P2a), potassium (6Q2a).
Extractable acidity—barium chloride-triethanolamine IV (6H5a).
Cation-exchange capacity—ammonium acetate, pH 7.0, steam distillation (5A8b).
Cation-exchange capacity—sum of cations (5A3a).
Effective cation-exchange capacity—sum of extractable cations plus aluminum (5A3b).
Base saturation—ammonium acetate, pH 7.0 (5C1).
Base saturation—sum of cations, TEA, pH 8.2 (5C3).
Reaction (pH)—1:1 water dilution (8C1f).
Reaction (pH)—saturated paste (8C1b).
Reaction (pH)—potassium chloride (8C1g).
Reaction (pH)—sodium fluoride (8C1d).
Reaction (pH)—calcium chloride (8C1f).
Aluminum—potassium chloride extraction (6G9c).
Aluminum—acid oxalate extraction (6G12b).
Iron—acid oxalate extraction (6C9b).
Silica—acid oxalate extraction (6V2b).
Sesquioxides—dithionate-citrate extract; iron (6C2h), aluminum (6G7b), manganese (6D2g).
Soil resistivity—saturated paste (8E1).
Total soluble salts—estimate from resistivity (8A2).
Total soluble salts—estimate from conductivity (8D5).
Carbonate as calcium carbonate—(fraction less than 2 mm [80 mesh]) manometric (6E1h).
Carbonate as calcium carbonate—(fraction less than 20 mm) manometric (6E4).
Gypsum—precipitation in acetone (6F1a).
Soluble ions—acid titration, saturated paste; carbonate (6I1b), bicarbonate (6J1b).
Soluble ions—anion chromatograph, saturated paste; chloride (6K1f), sulfate (6L1f), nitrate (6M1f); fluoride (6U1d); nitrite (6W1d).
Electrical conductivity—saturation extract (8A3a).
Sodium adsorption ratio (5E).
Extractable phosphorus—Bray P-1 (6S3).
Available phosphorus—(method of reporting laboratory).

Water Features

Table 24 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 24 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 24 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 25 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999 and 2003). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 26 shows the classification of the soils in the survey area, and table 27 arranges the taxonomic units by order, suborder, great group, and subgroup. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Alfisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Xeralf (*Xer*, meaning dry, plus *alf*, from Alfisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Durixeralfs (*Duri*, meaning hard, plus *xeralf*, the suborder of the Alfisols that has a xeric moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Durixeralfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is loamy-skeletal, mixed, superactive, thermic, shallow Typic Durixeralfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. An example is the Redswale series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993) and in the “Field Book for Describing and Sampling Soils” (Schoeneberger and others, 2002). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 2003). Unless otherwise indicated, colors in the descriptions are for dry soil. Following the pedon description is the range of important characteristics of the soils in the series.

Almendra Series

The Almendra series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on alluvial fans. Slopes are 0 to 1 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Pachic Haploxerolls

Typical Pedon

Almendra loam, on a southwest-facing slope of 1 percent, in a leveled fallow field, under a cover of annual grasses, at an elevation of 180 feet (55 m). When described on 5/8/1995, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.

Ap1—0 to 4 inches (0 to 10 cm); brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; 23 percent clay; moderate medium subangular blocky structure parting to moderate very fine and fine granular; slightly hard, very friable, nonsticky, slightly plastic; few fine and medium and common very fine roots; few very fine to medium tubular pores; 3 percent gravel; moderately acid, pH 5.8 by pH meter 1:1 water; clear smooth boundary.

Ap2—4 to 14 inches (10 to 36 cm); grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; 24 percent clay; moderate medium subangular blocky structure parting to moderate very fine and fine granular; slightly hard, very friable, nonsticky, slightly plastic; common very fine to medium roots; common fine and medium and many very fine tubular pores; fine spherical wormcasts throughout; 3 percent gravel; slightly acid, pH 6.3 by pH meter 1:1 water; clear smooth boundary.

Bw1—14 to 29 inches (36 to 74 cm); brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; 20 percent clay; moderate medium subangular blocky structure parting to moderate very fine and fine granular; slightly hard, very friable, nonsticky, slightly plastic; few fine and medium and common very fine roots; common fine and medium tubular, many very fine tubular, and common very fine to medium irregular pores; fine spherical wormcasts throughout; 5 percent gravel; neutral, pH 6.6 by pH meter 1:1 water; clear wavy boundary.

Bw2—29 to 40 inches (74 to 102 cm); brown (10YR 5/3) loam, dark brown (7.5YR 3/2) moist; 17 percent clay; moderate medium subangular blocky structure parting to moderate very fine and fine granular; slightly hard, very friable, nonsticky, slightly plastic; few fine and medium and common very fine roots; many very fine to medium irregular and tubular pores; 35 percent fine irregular brown (7.5YR 4/4 moist) oxidized iron masses lining pores; fine spherical wormcasts throughout; 4 percent gravel; neutral, pH 7.2 by pH meter 1:1 water; clear wavy boundary.

Bw3—40 to 52 inches (102 to 132 cm); brown (10YR 5/3) loam, brown (7.5YR 4/2) moist; 16 percent clay; moderate medium subangular blocky structure parting to moderate very fine and fine subangular blocky; slightly hard, very friable, nonsticky, slightly plastic; few fine and medium and common very fine roots; many very fine to medium tubular and irregular pores; 5 percent fine irregular brown (7.5YR 4/4 moist) oxidized iron masses lining pores; 65 percent fine irregular dark gray (10YR 4/1 moist) iron depletions on faces of peds and lining pores; 3 percent gravel; neutral, pH 7.3 by pH meter 1:1 water; clear wavy boundary.

Bw4—52 to 74 inches (132 to 188 cm); light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/3) moist; 15 percent clay; weak medium subangular blocky structure; soft, very friable, nonsticky, slightly plastic; common very fine to medium roots; many very fine to medium tubular and irregular pores; 35 percent fine and medium irregular light brownish gray (10YR 6/2 moist) iron depletions lining pores; 1 percent gravel; slightly alkaline, pH 7.4 by pH meter 1:1 water; clear smooth boundary.

Bw5—74 to 86 inches (188 to 218 cm); light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/3) moist; 13 percent clay; weak medium subangular blocky structure; soft, very friable, nonsticky, slightly plastic; few very fine roots; many very fine to medium tubular and irregular pores; 2 percent fine irregular black (N 2/0 moist) manganese masses throughout; 10 percent fine irregular brown (7.5YR 5/2 moist) iron depletions lining pores; 1 percent gravel; slightly alkaline, pH 7.4 by pH meter 1:1 water.

Type location: Butte County, California; about 2.0 miles north of Durham, approximately 2,300 feet north and 2,100 feet west of the southeast corner of sec. 13, T. 21 N., R. 1 E.; 39 degrees, 40 minutes, 25 seconds north latitude and 121 degrees, 48 minutes, 40 seconds west longitude; NAD27; USGS Quad: Chico, California.

Range in Characteristics

The thickness of the solum is more than 72 inches (183 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 140 to 160 days). The particle-size control section averages 18 to 27 percent clay and 0 to 5 percent rock fragments, mostly fine gravel. Mineralogy is mixed. Redoximorphic features, such as oxidized iron masses, iron depletions, and manganese masses, occur below a depth of 29 inches (74 cm). The content of organic matter is 1.2 to 4.6 percent from 0 to 40 inches (0 to 102 cm) and 0.34 to 0.84 percent from 40 to 86 inches (102 to 218 cm). By ammonium acetate, base saturation ranges from 97 to 100 percent and CEC ranges from 19.3 to 28.

The Ap horizon has dry color of 10YR 5/2, 5/3, 4/2, or 4/3. Moist color is 10YR 3/2, 3/3, 2/1, or 2/2. Texture is loam or fine sandy loam. The content of clay ranges from 15 to 27 percent. The content of gravel is 0 to 5 percent. Reaction ranges from moderately acid to slightly alkaline.

The Bw1 and Bw2 horizons have dry color of 10YR 5/2 or 5/3. Moist color is 10YR 3/2, 3/3, 4/2, or 4/3 or 7.5YR 3/2. Texture is loam or fine sandy loam. The content of clay ranges from 17 to 27 percent. The content of gravel is 0 to 5 percent. Reaction ranges from slightly acid to slightly alkaline.

The Bw3 horizon has dry color of 10YR 5/2, 5/3, 5/4, or 6/3. Moist color is 10YR 4/2, 4/3, 4/4, or 5/2. Texture is loam or fine sandy loam. The content of clay ranges from 15 to 27 percent. The content of gravel is 0 to 5 percent. Reaction ranges from slightly acid to slightly alkaline.

The Bw4 and Bw5 horizons have dry color of 10YR 4/3, 6/3, or 6/4 or 7.5YR 6/3 or 6/4. Moist color is 7.5YR 4/3 or 4/4 or 10YR 4/2, 4/3, 4/4, or 5/2. Texture is loam, sandy loam, fine sandy loam, or very fine sandy loam. The content of clay ranges

from 12 to 25 percent. The content of gravel is 0 to 5 percent. Reaction ranges from slightly acid to slightly alkaline.

Anita Series

The Anita series consists of shallow, poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are in swales, in basins, and along drainageways on strath terraces on Cascade foothills and fan terraces. Slopes range from 0 to 3 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Clayey, smectitic, thermic, shallow Xeric Duraquerts

Typical Pedon

Anita clay, on a slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 250 feet (76 m). (Colors are for dry soil unless otherwise noted.)

A1—0 to 1 inch (0 to 3 cm); dark gray (5YR 4/1) clay, very dark gray (5YR 3/1) moist; 48 percent clay; strong medium granular structure; extremely hard, very firm, very sticky, very plastic; many very fine roots; many fine pores; slightly acid, pH 6.3 by pH meter 1:1 water; abrupt wavy boundary.

A2—1 to 3 inches (3 to 8 cm); dark gray (5YR 4/1) clay, very dark gray (5YR 3/1) moist; 52 percent clay; strong medium angular blocky structure; extremely hard, very firm, very sticky, very plastic; many fine roots; many fine pores; moderately acid, pH 6.0 by pH meter 1:1 water; abrupt wavy boundary.

Bss1—3 to 10 inches (8 to 25 cm); dark gray (5YR 4/1) clay, very dark gray (5YR 3/1) moist; 53 percent clay; weak medium prismatic structure; extremely hard, very firm, very sticky, very plastic; many very fine roots; many fine pores; common slickensides; moderately acid, pH 6.0 by pH meter 1:1 water; clear wavy boundary.

Bss2—10 to 15 inches (25 to 38 cm); dark gray (5YR 4/1) clay, very dark gray (5YR 3/1) moist; 54 percent clay; massive when moist and strong coarse prismatic structure when dry; extremely hard, very firm, very sticky, very plastic; few very fine roots; few fine pores; common slickensides; slightly acid, pH 6.2 by pH meter 1:1 water; abrupt wavy boundary.

2Bkqm—15 to 20 inches (38 to 51 cm); brown (10YR 5/3) and very pale brown (10YR 7/4), indurated duripan; weak platy structure; interbedded with clay in the upper part; weakly calcareous; slightly alkaline, pH 7.5 by pH meter 1:1 water.

Type location: Tehama County, California; about 3.1 miles southeast of Vina, 1.5 miles north of the Butte County line, approximately 2,640 feet west and 1,320 feet north of southeast corner of sec. 29, T. 29 N., R. 1 E.; 39 degrees, 54 minutes, 7 seconds north latitude and 122 degrees, 0 minutes, 7 seconds west longitude; NAD27; USGS Quad: Vina, California.

Range in Characteristics

Depth to the duripan is 10 to 20 inches (25 to 51 cm). The duripan is underlain by volcanic sediments derived from tuffaceous rocks or volcanic sandstone. The mean annual soil temperature ranges from 63 to 66 degrees F (17 to 19 degrees C). The soils usually are dry by about June 15 and remain dry until September 15. The particle-size control section averages 45 to 55 percent clay and 0 to 25 percent rock fragments, mostly gravel and cobbles. Mineralogy is smectitic. Surface-initiated, reversible cracks 1/4 inch to 2 inches (0.6 to 5 cm) wide extend from the surface to the duripan from July through October. The surface commonly has hoof prints up to 6 inches (15 cm) or more deep. A fluctuating water table can occur between the top of

the duripan and the surface of the soil from November through May. Rock fragments on the surface range from 15 to 25 percent rounded cobbles, 0 to 10 percent rounded gravel, and 0 to 2 percent stones. Some pedons are directly underlain by sandstone or volcanic sediments with a discontinuous silica-cemented capping.

The A horizon has dry color of 10YR 4/2 or 5/2; 7.5YR 3/1, 4/1, 4/2, 5/2, or 6/2; or 5YR 4/1. Moist color is 10YR 3/2 or 4/2; 7.5YR 3/1, 3/2, or 4/2; or 5YR 2/2 or 3/1. Texture is gravelly clay, cobbly clay, or clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 20 percent. The content of cobbles also is 0 to 20 percent. The content of organic matter is 2 to 5 percent. Redoximorphic features range from 0 to 20 percent manganese masses and 0 to 5 percent oxidized iron masses. Reaction ranges from moderately acid to moderately alkaline.

The Bss horizon has dry color of 10YR 4/1 or 5/2, 7.5YR 4/2, or 5YR 4/1 or 5/1. Moist color is 10YR 3/2 or 4/1, 7.5YR 4/2 or 4/3, or 5YR 3/1 or 3/2. Texture is gravelly clay, cobbly clay, very cobbly clay, or clay. The content of clay ranges from 50 to 60 percent. The content of gravel is 0 to 35 percent, and the content of cobbles is 0 to 25 percent. The content of organic matter is 0.5 to 2 percent. The horizon has few or common slickensides and/or wedge-shaped aggregates. Redoximorphic features range from 0 to 20 percent manganese masses and from 0 to 5 percent oxidized iron masses. Reaction ranges from moderately acid to slightly alkaline.

The 2Bkqm horizon commonly has a manganese capping 1/4 to 3/8 inch (0.6 to 0.95 cm) thick. The content of gravel is 0 to 80 percent. The content of cobbles also is 0 to 80 percent.

Anita Taxadjunct

The Anita taxadjunct consists of shallow, poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are in areas of small basins, drainageways, toeslopes, footslopes, and saddles on Cascade foothills. Slopes range from 0 to 12 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Clayey, smectitic, thermic, shallow Vertic Endoaquepts

Typical Pedon

Anita taxadjunct, on a northwest-facing slope of 1 percent, under a cover of ryegrass and vinegarweed, at an elevation of 235 feet (72 meters). When described on 4/16/2001, the soil was dry to a depth of 2 inches (5 cm) and slightly moist from 2 to 11 inches (5 to 28 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/2) clay, brown (7.5YR 4/2) moist; 55 percent clay; strong medium and coarse subangular blocky structure; very rigid, friable, very sticky, very plastic; many very fine roots; few very fine tubular and common very fine to coarse irregular pores; 5 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bg—2 to 6 inches (5 to 15 cm); dark gray (5YR 4/1) clay, dark reddish gray (5YR 4/2) moist; 60 percent clay; moderate coarse prismatic structure parting to strong medium and coarse angular blocky; very rigid, friable, very sticky, very plastic; common very fine roots; few very fine tubular and common very fine to medium irregular pores; 5 percent gravel; neutral, pH 6.8 by Hellige-Truog; gradual smooth boundary.

Bssg—6 to 11 inches (15 to 28 cm); dark gray (5YR 4/1) clay, dark reddish gray (5YR 4/2) moist; 60 percent clay; moderate coarse prismatic structure parting to strong medium and coarse angular blocky; very rigid, friable, very sticky, very plastic; common very fine roots; few very fine tubular and common very fine to medium irregular pores; 25 percent slickensides and 20 percent wedge-shaped

aggregates; 5 percent gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

2Cr—11 inches (28 cm); very pale brown (10YR 8/3), moderately cemented volcanic sandstone bedrock, yellowish brown (10YR 5/4) moist; a manganese cap, 2 mm thick, on top of the horizon; slightly alkaline, pH 7.6 by Hellige-Truog.

Type location: Butte County, California; about 0.75 mile northeast of the intersection of Highways 99 and 149, approximately 50 feet south and 2,350 feet west of the northeast corner of sec. 6, T. 20 N., R. 3 E.; 39 degrees, 37 minutes, 29 seconds north latitude and 121 degrees, 40 minutes, 42 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

The depth to paralithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 60 to 68 degrees F (16 to 20 degrees C). The soil moisture control section is dry in all parts from about June through October (about 150 days). The particle-size control section averages 50 to 60 percent clay and 2 to 10 percent rock fragments, mostly gravel. Mineralogy is smectitic. Surface-initiated, reversible cracks 1 to 2 inches (2.5 to 5 cm) wide extend to a depth of 10 to 20 inches (25 to 51 cm) from April to November. A fluctuating water table can occur between the top of the bedrock and the surface of the soil from November through May. Redoximorphic features, such as iron concentrations, occur in the A horizon, and a manganese capping occurs on top of the 2Cr horizon. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 10 percent cobbles.

The A horizon has dry color of 10YR 4/1, 5/1, or 7/2 or 7.5YR 5/2. Moist color is 10YR 4/1 or 4/2 or 7.5YR 4/2. Texture is clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 10 percent. Reaction ranges from slightly acid to moderately alkaline.

The Bg horizon has dry color of 10YR 4/1 or 4/2, 7.5YR 4/2, or 5YR 4/1. Moist color is 10YR 4/1 or 4/2, 7.5YR 4/1, or 5YR 4/2. Texture is clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 10 percent. Reaction ranges from neutral to moderately alkaline.

The Bssg horizon has dry color of 10YR 4/1, 7.5YR 4/2, or 5YR 4/1. Moist color is 10YR 4/1, 7.5YR 4/1, or 5YR 4/2. Texture is clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 10 percent. Reaction ranges from neutral to moderately alkaline.

The Anita taxadjunct is a taxadjunct because it is underlain by paralithic bedrock instead of a duripan. This difference does not significantly affect the use, management, or interpretations of the soils.

Aquic Xerofluvents

Aquic Xerofluvents consist of very deep, poorly drained soils that formed in alluvium derived from granitic and volcanic rocks. These soils are in meadows in Sierra Nevada mountain valleys. Slopes range from 0 to 8 percent. The mean annual precipitation is about 80 inches (2,030 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Coarse-loamy, mixed, active, nonacid Aquic Xerofluvents

Typical Pedon

Aquic Xerofluvents, on a south-southwest-facing slope of 4 percent, under a cover of *Carex*, *Juncus*, aster, corn lily, alder, and willow, at an elevation of 4,250 feet (1,295 m). When described on 9/16/1999, the soil was dry to a depth of 49 inches (124 cm) and slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches (0 to 8 cm); dark grayish brown (10YR 4/2) peaty very fine sandy loam, very dark brown (10YR 2/2) moist; 4 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine to medium irregular and tubular pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

A2—3 to 7 inches (8 to 18 cm); dark gray (10YR 4/1) mucky fine sandy loam, very dark gray (10YR 3/1) moist; 4 percent clay; weak fine and medium granular structure; slightly hard, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine to medium tubular and irregular pores; slightly acid, pH 6.3 by Hellige-Truog; abrupt smooth boundary.

C—7 to 16 inches (18 to 41 cm); light gray (10YR 7/2) gravelly coarse sandy loam, grayish brown (10YR 5/2) moist; 4 percent clay; single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine to medium interstitial and tubular pores; 30 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; abrupt smooth boundary.

Ab—16 to 19 inches (41 to 48 cm); gray (10YR 5/1) mucky fine sandy loam, black (10YR 2/1) moist; 6 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine and fine and common medium tubular pores; 2 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

C´—19 to 23 inches (48 to 58 cm); light brownish gray (10YR 6/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; 2 percent clay; single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine to medium interstitial and tubular pores; 15 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; abrupt smooth boundary.

A´b—23 to 35 inches (58 to 89 cm); dark gray (10YR 4/1) mucky very fine sandy loam, black (10YR 2/1) moist; 4 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine and fine tubular pores; slightly acid, pH 6.3 by Hellige-Truog; abrupt smooth boundary.

C´´—35 to 49 inches (89 to 124 cm); very gravelly loamy coarse sand; 2 percent clay; single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine to medium interstitial and tubular pores; 40 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

A´´b—49 to 63 inches (124 to 160 cm); dark grayish brown (10YR 4/2) peaty fine sandy loam, very dark gray (10YR 3/1) moist; 4 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine and fine tubular pores; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

C´´´—63 to 71 inches (160 to 180 cm); gravelly loamy coarse sand; 2 percent clay; single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine to medium interstitial and tubular pores; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

A´´´b—71 to 80 inches (180 to 203 cm); dark gray (10YR 4/1) mucky fine sandy loam, black (10YR 2/1) moist; 4 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine and fine tubular pores; 1 percent gravel; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Plumas County, California; about 0.2 mile southeast of Campbell Cow Camp, approximately 1,200 feet south and 700 feet east of the center of sec. 14, T. 24 N., R. 5 E.; 39 degrees, 56 minutes, 1 second north latitude and 121 degrees, 22 minutes, 44 seconds west longitude; NAD27; USGS Quad: Kimshew Point, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The soil moisture control

section is dry in all parts from about August to October (about 90 days). The particle-size control section averages 2 to 6 percent clay and 2 to 25 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur from the surface of the soil to 43 inches (109 cm) below the surface from December through June and from 17 to 98 inches (43 to 250 cm) below the surface from July through November. Rock fragments on the surface range from 0 to 20 percent gravel.

The A horizon has dry color of 10YR 4/2 or 4/1. Moist color is 10YR 2/1 or 3/1. Texture is peaty very fine sandy loam, mucky very fine sandy loam, peaty fine sandy loam, or mucky fine sandy loam. The content of clay ranges from 2 to 6 percent. The content of gravel is 0 to 5 percent. Reaction is slightly acid.

The C horizon has dry color of 10YR 6/2 or the color of the fresh mineral grains. Moist color is 10YR 4/2 or the color of the fresh mineral grains. Texture is gravelly coarse sandy loam, gravelly sandy loam, very gravelly loamy coarse sand, or gravelly loamy coarse sand. The content of clay ranges from 2 to 6 percent. The content of gravel is 15 to 45 percent. Reaction is slightly acid.

The Ab horizon has dry color of 10YR 4/1, 4/2, or 5.1. Moist color is 10YR 2/1 or 3/1. Texture is mucky fine sandy loam, mucky very fine sandy loam, or fine sandy loam. The content of clay ranges from 2 to 6 percent. The content of gravel is 0 to 5 percent. Reaction is slightly acid.

Arbuckle Series

The Arbuckle series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on low terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 19 inches (483 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Arbuckle gravelly loam, on a slope of 1 percent, under a cover of annual grasses, at an elevation of 110 feet (33 m). When described on 5/29/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A1—0 to 4 inches (0 to 11 cm); brown (10YR 5/3) gravelly loam, brown (10YR 4/3) moist; 20 percent clay; strong fine and medium subangular blocky structure; hard, friable, nonsticky, slightly plastic; many very fine and fine and common medium roots; common very fine and fine tubular pores; 15 percent subrounded gravel; neutral, pH 7.0 by Hellige-Truog; abrupt wavy boundary.

A2—4 to 9 inches (11 to 23 cm); light yellowish brown (10YR 6/4) gravelly loam, brown (10YR 4/3) moist; 23 percent clay; moderate medium subangular blocky structure; very hard, friable, nonsticky, slightly plastic; common very fine to medium roots; common fine and medium tubular pores; 2 percent patchy faint clay films in root channels and/or pores; 15 percent subrounded gravel; neutral, pH 7.0 by Hellige-Truog; gradual wavy boundary.

Bt1—9 to 20 inches (23 to 51 cm); light yellowish brown (10YR 6/4) gravelly loam, dark grayish brown (10YR 4/2) moist; 24 percent clay; moderate medium and coarse subangular blocky structure; very hard, firm, slightly sticky, slightly plastic; common very fine to medium roots; common fine and medium tubular pores; 30 percent discontinuous distinct clay films throughout; 15 percent subrounded gravel; neutral, pH 7.0 by Hellige-Truog; gradual wavy boundary.

Bt2—20 to 32 inches (51 to 81 cm); light yellowish brown (10YR 6/4) loam, dark grayish brown (10YR 4/2) moist; 24 percent clay; moderate medium and coarse subangular blocky structure; very hard, friable, slightly sticky, slightly plastic; few very fine and fine and common fine and medium roots; common fine and medium

tubular pores; 35 percent discontinuous distinct clay films throughout; 10 percent subrounded gravel; slightly alkaline, pH 7.5 by Hellige-Truog; gradual wavy boundary.

Bt3—32 to 49 inches (81 to 125 cm); yellowish brown (10YR 5/4) gravelly loam, brown (10YR 4/3) moist; 24 percent clay; moderate medium subangular blocky structure; very hard, friable, slightly sticky, slightly plastic; few very fine to medium roots; common fine tubular pores; 25 percent discontinuous distinct clay films throughout; 15 percent subrounded gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear wavy boundary.

2Bt4—49 to 68 inches (125 to 173 cm); brown (7.5YR 5/4) very gravelly sandy clay loam, brown (7.5YR 4/3) moist; 26 percent clay; moderate medium subangular blocky structure; extremely hard, firm, slightly sticky, slightly plastic; few very fine to medium roots; common fine tubular pores; 40 percent continuous prominent clay films throughout; 55 percent subrounded gravel; slightly alkaline, pH 7.5 by Hellige-Truog; gradual wavy boundary.

2Bt5—68 to 86 inches (173 to 219 cm); brown (7.5YR 5/4) very gravelly sandy clay loam, brown (7.5YR 4/3) moist; 21 percent clay; weak medium and coarse subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine to medium roots; few very fine tubular pores; 55 percent continuous prominent clay films throughout; 50 percent subrounded gravel; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California, United States Fish and Wildlife Service at Rancho Llano Seco, empty lot west of swallow barn; about 1.9 miles southeast of Rancho Llano Seco headquarters; approximately 7,400 feet west of 7 Mile Lane and 14,200 feet south of the line between T. 21 N. and T. 20 N.; in an unsectionized area in the Llano Seco Land Grant; 39 degrees, 35 minutes, 5 seconds north latitude and 121 degrees, 56 minutes, 8 seconds west longitude; NAD83; USGS Quad: Llano Seco, California.

Range in Characteristics

The thickness of the solum is more than 85 inches (216 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 24 to 27 percent clay and 10 to 20 percent rock fragments, mostly gravel. Mineralogy is mixed. The estimated content of organic matter is 0.5 to 0.8 percent to a depth of 9 inches (23 cm) and less than 0.5 percent below that depth. By sum of cations, base saturation is assumed to be more than 75 percent throughout the profile. Rock fragments on the surface range from 0 to 20 percent gravel, mostly quartz and chert.

The A horizon has dry color of 10YR 5/3, 6/2, 6/3, or 6/4. Moist color is 10YR 2/2, 3/1, 4/2, or 4/3. Texture is gravelly loam. The content of clay ranges from 20 to 24 percent. The content of gravel, mostly quartz and chert, ranges from 15 to 30 percent. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 5/4, 6/4, or 7/4. Moist color is 10YR 4/2 or 4/3 or 7.5YR 4/3 or 5/4. Texture is gravelly loam, loam, or clay loam. The content of clay ranges from 24 to 35 percent. The content of gravel is 10 to 30 percent. Reaction ranges from slightly acid to slightly alkaline.

The 2Bt or BC horizon has dry color of 7.5YR 5/4 or 6/4. Moist color is 7.5YR 4/3 or 5/4. Texture is very gravelly or extremely gravelly sandy clay loam. The content of clay ranges from 21 to 26 percent. The content of gravel is 45 to 80 percent. Reaction is slightly alkaline.

Argonaut Taxadjunct

The Argonaut taxadjunct consists of moderately deep, well drained soils that formed in colluvium and residuum derived from mixed metavolcanic and metamorphosed intrusive igneous rocks. These soils are on metamorphic Sierra Nevada foothills. Slopes range from 2 to 30 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Argonaut loam, on a south-facing slope of 13 percent, under a cover of blue oak, foothill pine, wild oat, and annual ryegrass, at an elevation of 580 feet (177 m). When described on 5/22/2000, the soil was dry to a depth of 8 inches (20 cm) and moist from 8 to 30 inches (20 to 76 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/4) loam, dark brown (7.5YR 3/4) moist; 18 percent clay; moderate very fine and fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many very fine roots throughout; many very fine and fine tubular pores; 10 percent fine spherical yellowish red (5YR 5/6 dry) oxidized iron masses throughout; 2 percent subangular quartz gravel and 8 percent subangular metavolcanic gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

Bt1—2 to 8 inches (5 to 20 cm); brown (7.5YR 4/4) clay loam, dark reddish brown (5YR 3/4) moist; 29 percent clay; moderate very fine and fine subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; many very fine roots throughout; many very fine and fine tubular pores; 15 percent discontinuous distinct clay films on faces of peds; 2 percent subangular quartz gravel and 8 percent subangular metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.

Bt2—8 to 14 inches (20 to 36 cm); brown (7.5YR 4/4) clay, dark reddish brown (5YR 3/4) moist; 43 percent clay; strong very fine and fine subangular blocky structure; very hard, firm, very sticky, very plastic; common fine, few coarse, and many very fine roots throughout; many very fine and fine and common medium tubular pores; 30 percent discontinuous distinct clay films on faces of peds; 2 percent subangular quartz gravel and 8 percent subangular metavolcanic gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt wavy boundary.

Bt3—14 to 20 inches (36 to 51 cm); brown (7.5YR 4/4) clay, dark reddish brown (5YR 3/4) moist; 45 percent clay; strong fine and medium subangular blocky structure; very hard, very firm, very sticky, very plastic; few medium and many very fine roots throughout; many very fine and fine tubular pores; 40 percent discontinuous distinct clay films on faces of peds; 1 percent subangular quartz gravel and 4 percent subangular metavolcanic gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

BCt1—20 to 26 inches (51 to 66 cm); strong brown (7.5YR 5/6) clay, yellowish red (5YR 4/6) moist; 40 percent clay; strong fine and medium subangular blocky structure; hard, firm, very sticky, very plastic; common fine, few medium, and few very fine roots throughout; common fine and many very fine tubular pores; 10 percent slickensides and 40 percent discontinuous prominent clay films on faces of peds; 1 percent subangular quartz gravel and 4 percent subangular metavolcanic gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

BCt2—26 to 30 inches (66 to 76 cm); yellowish brown (10YR 5/6) clay loam, strong brown (7.5YR 4/6) moist; 36 percent clay; moderate fine and medium subangular

blocky structure; moderately hard, firm, moderately sticky, moderately plastic; common very fine and fine and few medium roots throughout; many very fine tubular pores; 4 percent slickensides and 20 percent discontinuous distinct clay films on faces of peds; 1 percent subangular quartz gravel and 4 percent subangular metavolcanic gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual wavy boundary.

Cr—30 inches (76 cm); moderately cemented metamorphic bedrock; few fine and medium roots on top of the horizon.

Type location: Butte County, California; about 2.2 miles northwest of Bangor, approximately 400 feet north and 350 feet east of the southwest corner of sec. 20, T. 18 N., R. 5 E.; 39 degrees, 23 minutes, 49.88 seconds north latitude and 121 degrees, 26 minutes, 36.37 seconds west longitude; NAD83; USGS Quad: Bangor, California.

Range in Characteristics

The depth to paralithic bedrock is 20 is 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 150 days). The particle-size control section averages 35 to 50 percent clay and 5 to 20 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 7.5YR 4/4, 4/6, or 5/4 or 5YR 4/6. Moist color is 7.5YR 3/4 or 5YR 4/4. Texture is loam or clay loam. The content of clay ranges from 18 to 30 percent. The content of gravel is 5 to 10 percent. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 2 to 6 percent. Reaction ranges from moderately acid to neutral.

The upper part of the Bt horizon has dry color of 7.5YR 4/4, 4/6, or 5/6 or 5YR 4/6 or 5/6. Moist color is 5YR 3/4 or 4/4. Texture is clay loam. The content of clay ranges from 28 to 40 percent. The content of gravel is 5 to 12 percent. By sum of cations, base saturation ranges from 65 to 75 percent. The content of organic matter is 1 to 3 percent. Reaction ranges from moderately acid to neutral.

The lower part of the Bt horizon has dry color of 7.5YR 4/4, 4/6, or 5/6/ or 5YR 4/6 or 5/6. Moist color is 5YR 3/4 or 4/4. Texture is clay or gravelly clay. The content of clay ranges from 40 to 50 percent. The content of gravel is 3 to 20 percent, the content of cobbles is 0 to 10 percent, and the content of stones is 0 to 10 percent. By sum of cations, base saturation ranges from 65 to 75 percent. The content of organic matter is 1 to 2 percent. Reaction ranges from moderately acid to neutral.

The BCt horizon has dry color of 10YR 5/6 or 7.5YR 5/4 or 5/6. Moist color is 7.5YR 4/6 or 5YR 3/4 or 4/6. Texture is clay loam or clay. The content of clay ranges from 35 to 45 percent. The content of gravel is 5 to 10 percent. By sum of cations, base saturation ranges from 75 to 85 percent. The content of organic matter is 0 to 1 percent. Reaction is slightly acid or neutral.

The Argonaut taxadjunct is a taxadjunct because base saturation is less than is defined as the range for the series. This difference does not significantly affect the use, management, or interpretations of the soils

Auburn Series

The Auburn series consists of shallow, well drained soils that formed in material weathered from basic metavolcanic rocks. These soils are on metamorphic Sierra Nevada foothills. Slopes range from 3 to 75 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy, mixed, superactive, thermic Lithic Haploxerepts

Typical Pedon

Auburn loam, on a slope of 3 to 8 percent, at an elevation of 1,660 feet (503 m). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/4) loam, reddish brown (5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; slightly acid; abrupt smooth boundary.

Bw1—2 to 10 inches (5 to 25 cm); reddish brown (5YR 5/4) loam, reddish brown (5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine to medium roots; many fine and few very fine and medium tubular pores; slightly acid; abrupt irregular boundary.

Bw2—10 to 17 inches (25 to 43 cm); yellowish red (5YR 5/6) loam, reddish brown (5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine to medium roots; many fine and few very fine and medium tubular pores; slightly acid; abrupt irregular boundary.

R—17 inches; indurated amphibolite schist bedrock.

Type location: Yuba County, California; about 3.6 miles northeast of Camp Far West Reservoir Dam, approximately 500 feet north and 500 feet east of the southwest corner of sec. 34, T. 15 N., R. 6 E.; 39 degrees, 6 minutes, 8 seconds north latitude and 121 degrees, 18 minutes, 3 seconds west longitude; NAD27; USGS Quad: Camp Far West, California.

Range in Characteristics

The depth to lithic contact ranges from 10 to 28 inches (25 to 71 cm) and is less than 20 inches (51 cm) in 50 percent or more of each pedon. The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The particle-size control section ranges from 12 to 25 percent clay. Mineralogy is mixed. By sum of cations, base saturation ranges from 60 to 85 percent. The content of organic matter is 1 to 2 percent to a depth of 17 inches (43 cm). The content of gravel is 2 to 15 percent, and the content of cobbles is 3 to 5 percent.

The A horizon has dry color of 7.5YR 5/4 or 4/4. Moist color is 7.5YR 4/4 or 3/4 or 5YR 4/4 or 3/4. Texture is loam or gravelly loam. The content of clay ranges from 12 to 25 percent. Reaction ranges from moderately acid to neutral.

The Bw horizon has dry color of 5YR 5/4 or 5/6. Moist color is 5YR 4/4 or 3/4. Texture is loam or gravelly loam. The content of clay ranges from 12 to 25 percent. Reaction ranges from moderately acid to neutral.

Beatsonhollow Series

The Beatsonhollow series consists of shallow, poorly drained soils that formed in residuum weathered from basalt. These soils are in swales on top of basalt plateaus on volcanic Sierra Nevada foothills. Slopes range from 2 to 5 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Lithic Haplohumults

Typical Pedon

Beatsonhollow gravelly loam, on a north-facing slope of 3 percent, under a cover of

annual grasses and forbs, at an elevation of 1,325 feet (404 m). When described on 10/18/2000, the soil was moist from 0 to 10 inches (0 to 25 cm). (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches (0 to 8 cm); brown (10YR 5/3) gravelly loam, dark brown (7.5YR 3/2) moist; 18 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many fine roots throughout; many very fine irregular pores; 10 percent fine distinct irregular yellowish red (5YR 4/6 moist) oxidized iron masses in the matrix; 5 percent basalt cobbles and 15 percent basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

A2—3 to 10 inches (8 to 25 cm); brown (10YR 4/3) cobbly loam, dark brown (7.5YR 3/2) moist; 22 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and medium roots throughout; common fine irregular pores; 10 percent basalt gravel and 20 percent basalt cobbles; strongly acid, pH 5.5 by Hellige-Truog; gradual smooth boundary.

Bt—10 to 17 inches (25 to 43 cm); brown (10YR 4/3) very cobbly loam, dark brown (7.5YR 3/2) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common fine and few medium roots throughout; common fine and few very fine tubular pores; 15 percent discontinuous faint clay films on surfaces along pores; 15 percent basalt gravel and 35 percent basalt cobbles; very strongly acid, pH 5.0 by Hellige-Truog; abrupt smooth boundary.

R—17 inches (43 cm); indurated basalt bedrock.

Type location: Butte County, California; about 5.5 miles north of Oroville, approximately 1,000 feet west and 1,000 feet south of the northeast corner of sec. 17, T. 20 N., R. 4 E.; 39 degrees, 35 minutes, 42.22 seconds north latitude and 121 degrees, 32 minutes, 34.3 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about May to November (about 150 to 200 days). The particle-size control section averages 22 to 29 percent clay and 35 to 65 percent rock fragments, mostly cobbles. Mineralogy is mixed. By sum of cations, base saturation ranges from 4 to 7 percent. A fluctuating water table can occur between the top of the bedrock and the surface of the soil from November through April. Rock fragments on the surface range from 10 to 20 percent gravel and 0 to 15 percent cobbles.

The A horizon has dry color of 7.5YR 3/4, 4/3, or 4/4 or 10YR 3/4, 4/3, 4/4, or 5/3. Moist color is 7.5YR 2/2, 3/2, or 3/3 or 10YR 2/2, 3/2, or 3/3. Texture is loam, gravelly loam, very gravelly loam, or cobbly loam. The content of clay ranges from 14 to 22 percent. The horizon has 10 to 25 percent gravel and 0 to 20 percent cobbles. The content of organic matter is 4 to 8 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 4/3 or 4/4 or 10YR 4/3 or 4/4. Moist color is 7.5YR 3/2, 3/3, or 3/4 or 10YR 3/2, 3/3, or 3/4. Texture is gravelly loam, very gravelly loam, extremely cobbly loam, cobbly loam, very cobbly loam, very cobbly clay loam, or extremely cobbly clay loam. The content of clay ranges from 20 to 29 percent. The horizon has 10 to 30 percent gravel and 5 to 45 percent cobbles. The content of organic matter is 1.5 to 8 percent. Reaction is moderately acid or strongly acid.

Beatsonhollow Taxadjunct

The Beatsonhollow taxadjunct consists of shallow, somewhat poorly drained soils that formed in residuum derived from basalt. These soils are on mounds on top of basalt plateaus on Sierra Nevada foothills. Slopes range from 2 to 30 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Loamy, mixed, superactive, thermic Lithic Haplohumults

Typical Pedon

Beatsonhollow taxadjunct fine sandy loam, on a west-facing slope of 2 percent, under a cover of annual grasses and forbs, at an elevation of 500 feet (152 m). When described on 6/19/2001, the soil was dry to a depth of 10 inches (25 cm) and slightly moist from 10 to 18 inches (25 to 46 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 3 cm); brown (7.5YR 5/4) fine sandy loam, brown (7.5YR 4/3) moist; 15 percent clay; strong thin platy structure; slightly hard, friable, nonsticky, nonplastic; many very fine roots; common very fine tubular pores; 20 percent very fine irregular oxidized iron masses; 10 percent subangular basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt1—1 to 6 inches (3 to 15 cm); strong brown (7.5YR 5/6) gravelly loam, dark brown (7.5YR 3/4) moist; 18 percent clay; moderate fine subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; 15 percent discontinuous distinct clay films on faces of peds; 20 percent subangular basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt2—6 to 10 inches (15 to 25 cm); strong brown (7.5YR 5/6) gravelly loam, dark brown (7.5YR 3/4) moist; 22 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; 20 percent discontinuous distinct clay films on faces of peds; 20 percent subangular basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt3—10 to 15 inches (25 to 38 cm); brown (7.5YR 5/4) gravelly loam, dark reddish brown (5YR 3/4) moist; 25 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few fine and common very fine tubular pores; 25 percent discontinuous prominent clay films on faces of peds; 20 percent subangular basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt4—15 to 18 inches (38 to 46 cm); yellowish red (5YR 5/6) very gravelly loam, dark reddish brown (5YR 3/4) moist; 27 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few fine and common very fine tubular pores; 25 percent discontinuous prominent clay films on faces of peds; 40 percent subangular basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

R—18 inches (46 cm); indurated basalt bedrock.

Type location: Butte County, California; about 2.8 miles northwest of Oroville, on Sugarloaf Peak, approximately 200 feet west and 2,700 feet north of the southeast corner of sec. 3, T. 19 N., R. 3 E.; 39 degrees, 31 minutes, 54 seconds north latitude and 121 degrees, 36 minutes, 51 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control

section averages 18 to 27 percent clay and 20 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. By sum of cations, base saturation ranges from 4 to 7 percent. A fluctuating water table can occur between the top of the bedrock and a depth of 5 inches (13 cm) from November through April. Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 15 percent cobbles, and 0 to 5 percent stones.

The A horizon has dry color of 7.5YR 5/4 or 10YR 4/3 or 5/3. Moist color is 7.5YR 3/2, 3/3, or 4/3. Texture is fine sandy loam or gravelly loam. The content of clay ranges from 15 to 18 percent. The content of gravel is 5 to 20 percent. The content of organic matter is 4 to 8 percent. Redoximorphic features range from 10 to 20 percent oxidized masses of iron. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 5/4 or 5/6, 10YR 5/3 or 5/4, or 5YR 5/6. Moist color is 7.5YR 3/2, 3/3, 3/4, or 4/3 or 5YR 3/4. Texture is gravelly loam, loam, or very gravelly loam. The content of clay ranges from 18 to 27 percent. The content of gravel is 5 to 40 percent. The content of organic matter is 1.5 to 5 percent. Redoximorphic features range from 0 to 10 percent oxidized masses of iron. Reaction ranges from strongly acid to slightly acid.

The Beatsonhollow taxadjunct in map unit 342 is a taxadjunct because the soil is on mounds, the particle-size control section is loamy, and the soil has an ochric epipedon. These differences do not significantly affect the use, management, or interpretations of the soil.

Beecee Series

The Beecee series consists of very deep, well drained soils that formed in tephra and colluvium derived from volcanic rocks over residuum derived from volcanic rocks. These soils are on side slopes on volcanic ridges in the Cascade Mountains. Slopes range from 30 to 70 percent. The mean annual precipitation is about 78 inches (1,981 mm), and the mean annual air temperature is about 50 degrees F (10 degrees C).

Taxonomic class: Medial-skeletal, mixed, mesic Typic Haploxerands

Typical Pedon

Beecee very gravelly medial loam, on an east-facing slope of 46 percent, under a cover of California black oak and scattered mixed conifers, at an elevation of 3,880 feet (1,183 m). When described on 11/30/1995, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); leaves, needles, and twigs.

Oe—0.5 to 1 inch (1 to 2 cm); partially decomposed leaves, needles, and twigs.

A—1 inch to 4 inches (2 to 9 cm); yellowish brown (10YR 5/4) very gravelly medial loam, dark brown (7.5YR 3/2) moist; 19 percent clay; weak fine and medium subangular blocky structure parting to weak fine granular; soft, very friable, nonsticky, nonplastic; many very fine and fine and common medium roots; many very fine and fine tubular and common medium and coarse irregular pores; 35 percent subangular gravel; moderately acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.7; gradual smooth boundary.

Bt1—4 to 8 inches (9 to 20 cm); brown (7.5YR 5/4) very gravelly medial loam, dark brown (7.5YR 3/3) moist; 16 percent clay; weak fine subangular blocky structure parting to moderate very fine granular; soft, very friable, slightly sticky, nonplastic; many very fine to medium roots; many very fine and fine tubular and many medium irregular pores; few faint and distinct discontinuous clay films on faces of peds and in pores; 45 percent subangular gravel and 2 percent subangular cobbles; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.7; gradual smooth boundary.

Bt2—8 to 15 inches (20 to 37 cm); brown (7.5YR 5/4) very gravelly medial loam, dark brown (7.5YR 3/4) moist; 15 percent clay; weak medium subangular blocky structure parting to moderate fine granular; soft, very friable, slightly sticky, nonplastic; many very fine and fine, many medium, and common coarse roots; many very fine and fine tubular and many medium irregular pores; few faint discontinuous clay films on faces of peds and in pores; 55 percent subangular gravel and 3 percent subangular cobbles; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 10.5; gradual smooth boundary.

Bt3—15 to 22 inches (37 to 55 cm); strong brown (7.5YR 4/6) extremely gravelly medial loam, reddish brown (5YR 4/3) moist; 16 percent clay; weak fine and medium subangular blocky structure parting to weak fine granular; slightly sticky, nonplastic; many very fine to medium roots; many very fine and fine tubular and many medium irregular pores; few faint discontinuous clay films on faces of peds and in pores; 65 percent subangular gravel and 5 percent subangular cobbles; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 10.4; gradual smooth boundary.

Bt4—22 to 31 inches (55 to 78 cm); reddish yellow (7.5YR 6/6) extremely gravelly loam, reddish brown (5YR 4/3) moist; 17 percent clay; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; many very fine to medium and common coarse roots; many very fine and fine tubular, common medium irregular, and common very coarse tubular pores; few faint discontinuous clay films on faces of peds and in pores; 65 percent subangular gravel and 3 percent subangular cobbles; strongly acid, pH 5.5 by meter 1:1 water; NaF pH 10.2; gradual smooth boundary.

Bt5—31 to 44 inches (78 to 111 cm); brownish yellow (10YR 6/6) very gravelly loam, brown (7.5YR 4/4) moist; 19 percent clay; moderate very fine granular structure; soft, very friable, slightly sticky, nonplastic; many very fine, many fine, and common medium and coarse roots; many very fine and fine tubular and common medium and coarse irregular pores; few faint discontinuous clay films on faces of peds and in pores; 45 percent subangular gravel and 3 percent subangular cobbles; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 10.0; clear smooth boundary.

2Bt6—44 to 59 inches (111 to 149 cm); yellowish brown (10YR 5/6) very gravelly loam, brown (7.5YR 4/4) moist; 24 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine and fine irregular and tubular and common medium irregular pores; many distinct discontinuous clay films on faces of peds and in pores; 45 percent subangular gravel, 5 percent subangular cobbles, and 5 percent subangular stones; strongly acid, pH 5.6 by pH meter 1:1 water; NaF pH 9.8; clear irregular boundary.

2Bt7—59 to 68 inches (149 to 172 cm); yellowish brown (10YR 5/8) very gravelly loam, brown (7.5YR 4/4) moist; 27 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; many distinct continuous clay films on faces of peds and in pores; 30 percent subangular gravel, 10 percent subangular cobbles, and 10 percent subangular stones; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 9.7; clear irregular boundary.

2Bt8—68 to 86 inches (172 to 218 cm); brownish yellow (10YR 6/6) very stony loam, brown (7.5YR 5/4) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; many distinct continuous clay films on faces of peds and in pores; 20 percent subangular gravel, 20

percent subangular cobbles, and 20 percent subangular stones; moderately acid, pH 5.8 by pH meter 1:1 water; NaF pH 9.6.

Type location: Butte County, California; about 2.2 miles southeast of Inskip, approximately 1,500 feet north and 850 feet east of the southwest corner of sec. 3, T. 24 N., R. 4 E.; 39 degrees, 57 minutes, 44.82 seconds north latitude and 121 degrees, 31 minutes, 5.65 seconds west longitude; NAD27; USGS Quad: Stirling City, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 52 to 58 degrees F (11 to 14 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 12 to 18 percent clay and 35 to 70 percent rock fragments, mostly gravel. Mineralogy is mixed. Acid oxalate extractable Al plus ½ Fe ranges from 2 to 2.5 to a depth of 21.7 inches (55 cm). P retention ranges from 91 to 97 to a depth of 21.7 inches (55 cm). Rock fragments on the surface range from 15 to 40 percent gravel, 0 to 20 percent cobbles, 0 to 15 percent stones, and 0 to 10 percent boulders. Some pedons have a Bw horizon.

The A horizon has dry color of 5YR 6/4; 7.5YR 5/2, 5/3, 6/2, or 6/3; or 10YR 5/4. Moist color is 5YR 3/2, 3/3, or 4/3 or 7.5YR 3/2, 3/3, 3/4, or 4/3. Texture is gravelly medial loam, very gravelly medial loam, gravelly medial sandy loam, or very gravelly medial sandy loam. The content of clay ranges from 8 to 20 percent. The horizon has 25 to 40 percent gravel, 0 to 15 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 10 to 15 percent. By sum of cations, base saturation ranges from 20 to 30 percent. By ammonium acetate, CEC ranges from 25 to 35. NaF pH is 10.0 to 11.0. Reaction ranges from moderately acid to neutral.

The upper part of the Bt horizon has dry color of 5YR 5/4 or 6/4; 7.5YR 4/6, 5/4, 5/6, 6/3, 6/4, 6/6, or 7/6; or 10YR 6/4. Moist color is 5YR 3/3, 4/3, or 4/4; 7.5YR 3/3, 3/4, or 4/4; or 10YR 3/4 or 4/4. Texture is gravelly medial loam, very gravelly medial loam, extremely gravelly medial loam, gravelly medial sandy loam, very gravelly medial sandy loam, or extremely gravelly medial sandy loam. The content of clay ranges from 10 to 20 percent. The content of gravel is 20 to 70 percent. The content of cobbles is 0 to 20 percent. The content of stones also is 0 to 20 percent. The content of organic matter is 3 to 8 percent. By sum of cations, base saturation ranges from 8 to 13 percent. By ammonium acetate, CEC ranges from 18 to 25. NaF pH is 9.8 to 11.0. Reaction ranges from strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 5YR 5/6 or 6/6; 7.5YR 6/6, 7/4, or 7/6; or 10YR 6/4, 6/6, or 7/6. Moist color is 5YR 4/3 or 4/6; 7.5YR 4/4, 5/4, or 5/6; or 10YR 4/4. Texture is gravelly loam, very gravelly loam, extremely gravelly loam, gravelly sandy loam, very gravelly sandy loam, very cobbly sandy loam, or extremely gravelly sandy loam. The content of clay ranges from 12 to 22 percent. The content of gravel is 20 to 75 percent, the content of cobbles is 0 to 30 percent, and the content of stones is 0 to 20 percent. The content of organic matter is 1 to 3 percent. By sum of cations, base saturation ranges from 15 to 25 percent. By ammonium acetate, CEC ranges from 16 to 21. NaF pH is 9.0 to 10.3. Reaction ranges from strongly acid to slightly acid.

The 2Bt horizon has dry color of 7.5YR 6/4 or 7/4 or 10YR 5/4, 5/6, 5/8, 6/3, 6/4, or 6/6. Moist color is 7.5YR 4/3, 4/4, or 5/4 or 10YR 3/4, 4/3, 4/4, or 5/4. Texture is very gravelly loam, very stony loam, very gravelly sandy loam, or very gravelly sandy clay loam. The content of clay ranges from 18 to 27 percent. The horizon has 20 to 60 percent gravel, 0 to 30 percent cobbles, and 0 to 30 percent stones. The content of organic matter is 0.2 to 1 percent. By sum of cations, base saturation ranges from 20

to 40 percent. By ammonium acetate, CEC ranges from 15 to 20. NaF pH is 9.0 to 10.0. Reaction ranges from very strongly acid to slightly acid.

Bigridge Series

The Bigridge series consists of deep, well drained soils that formed in colluvium and residuum derived from metavolcanic and metasedimentary rocks. These soils are on ridgetops and side slopes on Sierra Nevada foothills and mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 48 inches (1,219 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Ultic Haploxeralfs

Typical Pedon

Bigridge loam, on a north west-facing slope of 56 percent, under a cover of whiteleaf manzanita, toyon, interior live oak, and ponderosa pine, at an elevation of 2,000 feet (610 m). When described on 7/27/1999, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Oe—0 to 1 inch (0 to 3 cm); moderately decomposed plant material; abrupt smooth boundary.

A—1 to 5 inches (3 to 13 cm); brown (7.5YR 5/4) loam, dark reddish brown (5YR 3/3) moist; 16 percent clay; moderate fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many fine roots throughout; common fine tubular and common medium irregular pores; 15 percent subangular metavolcanic gravel; moderately acid, pH 5.7 by pH meter 1:1 water; abrupt wavy boundary.

BAt—5 to 9 inches (13 to 23 cm); yellowish red (5YR 5/6) gravelly loam, dark reddish brown (5YR 3/4) moist; 19 percent clay; strong fine subangular blocky structure; soft, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots throughout; many fine and common medium tubular pores; 20 percent discontinuous distinct clay films on faces of peds; 25 percent subangular metavolcanic gravel; moderately acid, pH 5.6 by pH meter 1:1 water; abrupt wavy boundary.

Bt1—9 to 15 inches (23 to 38 cm); yellowish red (5YR 5/6) gravelly loam, dark reddish brown (5YR 3/4) moist; 20 percent clay; strong fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and medium and few coarse roots throughout; many fine and common medium tubular pores; 20 percent discontinuous distinct clay films on faces of peds and 20 percent continuous distinct clay films on surfaces along pores; 20 percent subangular metavolcanic gravel; moderately acid, pH 5.8 by pH meter 1:1 water; clear wavy boundary.

Bt2—15 to 20 inches (38 to 51 cm); yellowish red (5YR 5/6) gravelly loam, dark red (2.5YR 3/6) moist; 21 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and few coarse roots throughout; common fine and few medium tubular pores; 40 percent continuous prominent clay films on surfaces along pores; 25 percent subangular metavolcanic gravel; moderately acid, pH 5.9 by pH meter 1:1 water; clear wavy boundary.

BCt1—20 to 27 inches (51 to 69 cm); yellowish red (5YR 5/6) very gravelly loam, dark reddish brown (2.5YR 3/4) moist; 20 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and coarse roots throughout; many fine and few medium tubular pores; 40 percent continuous prominent clay films on bottom surfaces of rock fragments; 50 percent

subangular metavolcanic gravel; slightly acid, pH 6.1 by pH meter 1:1 water; abrupt smooth boundary.

BCt2—27 to 36 inches (69 to 91 cm); yellowish red (5YR 5/6) extremely gravelly loam, dark reddish brown (2.5YR 3/4) moist; 17 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine, common coarse, and few very coarse roots throughout; common fine tubular pores; 10 percent discontinuous faint clay films on faces of peds; 85 percent subangular metavolcanic gravel; slightly acid, pH 6.1 by pH meter 1:1 water; abrupt smooth boundary.

BCt3—36 to 51 inches (91 to 129 cm); reddish yellow (7.5YR 7/6) very gravelly loam, yellowish red (5YR 5/8) moist; 18 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common fine to coarse roots throughout; few fine tubular pores; 60 percent continuous distinct clay films on surfaces along pores; 40 percent subangular metavolcanic gravel; slightly acid, pH 6.1 by pH meter 1:1 water; abrupt smooth boundary.

Crt—51 to 62 inches (129 to 157 cm); vertically oriented, highly weathered, paralithic greenschist; few very fine and coarse roots in cracks; 60 percent continuous prominent clay films on rock fragments.

Type location: Butte County, California; about 6.25 miles northeast of Oroville Dam, approximately 1,300 feet west and 750 feet south of the northeast corner of sec. 9, T. 20 N., R. 5 E.; 39 degrees, 36 minutes, 41.47 seconds north latitude and 121 degrees, 24 minutes, 51.65 seconds west longitude; NAD83; USGS Quad: Oroville Dam, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 53 to 59 degrees F (12 to 14 degrees C). The soil moisture control section is dry in all parts from about June to October (about 120 days). The particle-size control section averages 18 to 27 percent clay and 5 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 4 percent to a depth of 15 inches (38 cm) and is less than 1 percent from a depth of 15 to 51 inches (38 to 129 cm). By sum of cations, base saturation is 39 to 50 percent from 9 to 20 inches (23 to 51 cm) and is 50 to 75 percent from 20 to 51 inches (51 to 129 cm). Rock fragments on the surface range from 0 to 30 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones. In some pedons the lower part of the Bt horizon is silty clay with up to 50 percent clay. Some pedons do not have a BCt horizon.

The A horizon has dry color of 5YR 7/4 or 7/6; 7.5YR 4/2, 5/4, 6/4, or 7/4; or 10YR 6/3. Moist color is 5YR 2.5/1, 3/3, 3/4, 4/4, 5/4, or 4/6 or 7.5YR 4/3, 4/4, or 4/6. Texture is loam or gravelly loam with a high content of silt. The content of clay ranges from 15 to 25 percent. The content of gravel is 5 to 25 percent. Reaction ranges from moderately acid to neutral.

The BAt horizon has dry color of 7.5YR 5/4 or 6/6, 5YR 5/6 or 7/6, or 2.5YR 7/6. Moist color is 7.5YR 4/6, 5YR 3/4 or 4/6, or 2.5YR 3/6 or 5/6. Texture is gravelly loam, loam, clay loam, or gravelly clay loam with a high content of silt. The content of clay ranges from 19 to 30 percent. The content of gravel is 10 to 25 percent. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 5YR 5/6, 6/6, 6/8, 7/4, 7/6, 7/8, or 8/4; 2.5YR 4/8, 5/6, 6/6, 7/6, or 7/8; or 7.5YR 5/4 or 6/6. Moist color is 5YR 3/4, 3/6, 4/4, 4/6, 5/6, or 5/8 or 2.5YR 3/6, 4/6, 5/6, 6/6, or 5/8. Texture is gravelly loam, gravelly clay loam, loam, clay loam, or silty clay loam with a high content of silt. The content of clay ranges from 18 to 35 percent. The horizon has 5 to 25 percent gravel and 0 to 10 percent cobbles. Reaction ranges from very strongly acid to neutral.

The BCt horizon has dry color of 2.5YR 7/8, 5YR 5/6 or 6/6, or 7.5YR 7/6. Moist color is 2.5YR 3/4, 4/6, or 5/8 or 5YR 5/8. Texture is extremely gravelly loam, very gravelly clay loam, or extremely gravelly clay loam with a high content of silt. The content of clay ranges from 15 to 35 percent. The content of gravel is 40 to 85 percent. Reaction ranges from very strongly acid to slightly acid.

Billscabin Series

The Billscabin series consists of very deep, somewhat excessively drained soils that formed in colluvium and residuum weathered from quartz diorite. These soils are on side slopes on granitic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 75 inches (1,905 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Loamy-skeletal, isotic, mesic Typic Dystroxerepts

Typical Pedon

Billscabin gravelly sandy loam, on a northwest-facing slope of 51 percent, under a cover of mixed conifers, at an elevation of 4,575 feet (1,394 m). When described on 7/31/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); slightly decomposed litter of needles, leaves, and twigs.

A1—2 to 5 inches (5 to 13 cm); dark grayish brown (10YR 4/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; 5 percent clay; weak very fine subangular blocky structure parting to single grain; loose, very friable, nonsticky, nonplastic; common very fine and fine roots; many very fine interstitial pores; 25 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 11.5; abrupt smooth boundary.

A2—5 to 14 inches (13 to 36 cm); pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; 10 percent clay; weak fine subangular blocky structure parting to single grain; soft, very friable, nonsticky, nonplastic; common very fine to medium roots; many very fine interstitial pores; 40 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.5; abrupt smooth boundary.

Bw—14 to 27 inches (36 to 69 cm); very pale brown (10YR 7/3) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; 15 percent clay; weak fine subangular blocky structure parting to single grain; soft, very friable, nonsticky, nonplastic; common very fine to coarse roots; common very fine tubular pores; common mica flakes; 36 percent gravel and 10 percent stones; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 10.0; abrupt smooth boundary.

C1—27 to 37 inches (69 to 94 cm); very pale brown (10YR 8/2) very gravelly loamy sand, light yellowish brown (10YR 6/4) moist; 3 percent clay; weak fine subangular blocky structure parting to single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine interstitial pores; common mica flakes; 33 percent gravel and 2 percent stones; moderately acid, pH 5.8 by Hellige-Truog; clear wavy boundary.

C2—37 to 57 inches (94 to 145 cm); very pale brown (10YR 8/2) very gravelly loamy sand, light yellowish brown (10YR 6/4) moist; 3 percent clay; weak fine subangular blocky structure parting to single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine interstitial pores; common mica flakes; 40 percent gravel and 2 percent stones; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 10.0; clear wavy boundary.

C3—57 to 82 inches (145 to 208 cm); very pale brown (10YR 8/3) very gravelly loamy sand, light yellowish brown (10YR 6/4) moist; 4 percent clay; weak fine subangular blocky structure parting to single grain; loose, nonsticky, nonplastic;

many very fine to medium roots; many very fine interstitial pores; common mica flakes; 37 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 10.0.

Type location: Butte County, California; about 1.9 miles south of Camel Peak Lookout, approximately 1,800 feet west and 2,350 feet north of the southeast corner of sec. 8, T. 21 N., R. 8 E.; 39 degrees, 41 minutes, 33 seconds north latitude and 121 degrees, 6 minutes, 17 seconds west longitude; NAD83; USGS Quad: American House, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 52 to 56 degrees F (11 to 13 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 8 to 15 percent clay and 35 to 80 percent rock fragments, mostly gravel. Mineralogy is isotic. The content of organic matter is 2 to 4 percent from 2 to 5 inches (5 to 13 cm) and is less than 1 percent from 5 to 80 inches (13 to 203 cm). By ammonium acetate, base saturation ranges from 26 to 34 percent from 2 to 82 inches (5 to 208 cm). Rock fragments on the surface range from 0 to 50 percent cobbles, 0 to 50 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 10YR 5/2, 5/3, 5/4, 6/3, or 6/4. Moist color is 10YR 3/2, 3/3, or 4/3 or 7.5YR 3/3 or 3/4. Texture generally is gravelly sandy loam and very gravelly sandy loam but in some pedons is very gravelly coarse sandy loam, very stony coarse sandy loam, coarse sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 5 to 15 percent. The horizon has 5 to 40 percent gravel, 0 to 20 percent cobbles, and 0 to 50 percent stones. NaF pH is 10.0 to 11.8. Reaction is moderately acid or slightly acid.

The Bw horizon has dry color of 10YR 4/4, 5/4, 5/6, 6/2, 6/4, 6/6, 7/2, 7/3, 7/4, or 8/3 or 2.5Y 7/6. Moist color is 10YR 3/3, 4/2, 4/3, 4/4, 5/2, 5/3, 5/4, or 6/4 or 2.5Y 5/4. Texture is extremely gravelly sandy loam, very gravelly coarse sandy loam, very cobbly sandy loam, extremely cobbly sandy loam, very gravelly sandy loam, or very stony coarse sandy loam. The content of clay ranges from 5 to 15 percent. The horizon has 10 to 40 percent gravel, 0 to 50 percent cobbles, and 0 to 20 percent stones. NaF pH is 9.0 to 11.0. Reaction ranges from strongly acid to slightly acid.

The C horizon has dry color of 10YR 7/6 or 8/2. Moist color is 10YR 5/4, 6/2, or 6/4. Texture is very gravelly loamy sand, extremely cobbly sandy loam, extremely cobbly coarse sandy loam, cobbly loamy coarse sand, gravelly loamy sand, or extremely stony sandy loam. The content of clay ranges from 3 to 12 percent. The horizon has 10 to 40 percent gravel, 0 to 50 percent cobbles, and 0 to 50 percent stones. NaF pH is 9.0 to 10.8. Reaction ranges from very strongly acid to moderately acid.

Blavo Series

The Blavo series consists of moderately deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in flood basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 19 inches (483 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Very-fine, smectitic, thermic Xeric Duraquerts

Typical Pedon

Blavo clay, on a slope of less than 1 percent, under a cover of rice, at an elevation of 87 feet (26 m). When described on 5/7/1992, the soil was moist throughout. The water table was at a depth of 51 inches (130 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 5 inches (0 to 13 cm); dark gray (10YR 4/1) clay, very dark gray (10YR 3/1) moist; 65 percent clay; strong very coarse prismatic structure parting to strong fine and medium angular blocky; hard, friable, very sticky, very plastic; many very fine roots; vertical cracks 0.5 inch to 1.5 inches (1.3 to 3.8 cm) wide and 6 to 12 inches (15 to 30 cm) apart; common fine and medium brown (7.5YR 4/4 moist) oxidized iron masses; noneffervescent; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bssg1—5 to 16 inches (13 to 41 cm); dark gray (10YR 4/1) clay, very dark gray (10YR 3/1) moist; 65 percent clay; strong very coarse prismatic structure parting to strong coarse angular blocky; extremely hard, firm, very sticky, very plastic; many very fine roots; common very fine tubular pores; vertical cracks 0.5 inch to 1.5 inches (1.3 to 3.8 cm) wide and 6 to 12 inches (15 to 30 cm) apart; many wedge-shaped aggregates 4 to 6 inches (10 to 15 cm) wide; many slickensides; common fine brown (7.5YR 4/4 moist) oxidized iron masses; noneffervescent; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.

Bssg2—16 to 24 inches (41 to 61 cm); dark gray (10YR 4/1) clay, very dark gray (10YR 3/1) moist; 65 percent clay; moderate coarse prismatic structure parting to strong medium and coarse angular blocky; extremely hard, firm, very sticky, very plastic; common very fine roots; common very fine tubular pores; many wedge-shaped aggregates 4 to 6 inches (10 to 15 cm) wide; many slickensides; noneffervescent; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.

Bkssg—24 to 30 inches (61 to 76 cm); dark gray (10YR 4/1) clay, very dark gray (10YR 3/1) moist; 60 percent clay; moderate medium and coarse angular blocky structure; very hard, friable, very sticky, very plastic; few very fine roots; many very fine tubular pores; many wedge-shaped aggregates 1 to 3 inches (2.5 to 7.6 cm) wide; many slickensides; disseminated carbonates; strongly effervescent; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.

Bkg—30 to 36 inches (76 to 91 cm); gray (10YR 6/1) clay loam, dark gray (10YR 4/1) moist; 38 percent clay; strong fine and medium angular blocky structure; hard, friable, very sticky, very plastic; few very fine roots; many very fine tubular pores; many wedge-shaped aggregates 1 to 2 inches (2.5 to 5 cm) wide; common fine and medium irregular carbonate masses; violently effervescent; strongly alkaline, pH 8.5 by Hellige-Truog; abrupt wavy boundary.

2Bkqm—36 to 60 inches (91 to 152 cm); very pale brown (10YR 8/2), indurated duripan, brown (10YR 4/3) moist; massive; extremely hard, extremely firm; continuous indurated, silica-cemented laminar cap 15 to 25 mm thick; alternating layers of strongly cemented to indurated duripan to 60 inches; does not slake in HCl; many medium and coarse carbonate masses and many fine platelike black (N 2/0 moist) manganese masses at the top of the horizon; violently effervescent.

Type location: Butte County, California; about 3.2 miles southwest of Richvale, approximately 600 feet west and 2,350 feet north of the southeast corner of sec. 31, T. 19 N., R. 2 E.; 39 degrees, 29 minutes, 24 seconds north latitude and 121 degrees, 46 minutes, 57 seconds west longitude; NAD27; USGS Quad: West of Biggs, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 66 degrees F (17 to 19 degrees C). The soil moisture control section is dry from June to October (120 to 125 days). The particle-size control section averages 60 to 70 percent clay. Mineralogy is smectitic. The soils are calcareous from 15 to 34 inches (38 to 86 cm). Reversible, surface-initiated cracks 1 to 2 inches (2.5 to 5 cm) wide extend to a depth of 29 inches (74 cm) from May 15 to October 15 (150 days) when the soils are not irrigated. Few or common intersecting

slickensides are in the Bssg and Bkssg horizons, from 7 to 29 inches (18 to 74 cm). A fluctuating water table can occur between the top of the duripan and the surface of the soil from December through May. Redoximorphic features, such as manganese nodules and oxidized iron masses with color of 7.5YR 4/4 moist and a reduced matrix with chroma of 1 moist, occur in the horizons above the duripan. Some pedons have overwash of silt loam from 6 to 20 inches (15 to 51 cm) thick.

The Ap horizon has dry color of 10YR 3/1 or 4/1. Moist color is 10YR 2/1 or 3/1. The content of clay ranges from 60 to 70 percent. The content of organic matter is 1 to 2 percent. Reaction ranges from moderately acid to neutral.

The Bssg horizon has dry color of 10YR 3/1, 4/1, or 5/1. Moist color is 10YR 3/1 or 4/1. The content of clay ranges from 65 to 70 percent. The content of organic matter is 0.5 to 2 percent. Reaction ranges from neutral to moderately alkaline.

The Bkssg horizon has dry color of 10YR 3/1, 4/1, or 5/1. Moist color is 10YR 3/1, 4/1, or 4/2. The content of clay ranges from 65 to 70 percent. The content of organic matter is 0.5 to 1 percent. Reaction is slightly alkaline or moderately alkaline.

The Bkg horizon has dry color of 10YR 5/1, 5/2, 6/1, 6/2, or 6/3. Moist color is 10YR 4/1, 4/2, or 5/2 or 2.5Y 4/2. Texture is clay loam or clay. The content of clay ranges from 35 to 60 percent. The content of organic matter is 0.1 to 0.5 percent. Reaction is moderately alkaline or strongly alkaline.

The 2Bkqm horizon has dry color of 10YR 5/2, 6/2, 7/2, 7/3, or 8/2. Moist color is 10YR 4/2, 4/3, or 5/2. Rupture resistance ranges from indurated to strongly cemented. The horizon has alternating weakly and moderately silica- and lime-cemented layers.

Boga Series

The Boga series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on terraces along the Feather River. Slopes are 0 to 1 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Boga loam, on a slope of less than 1 percent, in a field about to be leveled for peaches, at an elevation of 90 feet (27 m). When described on 8/15/1994, the soil was slightly moist below a depth of 6 inches (15 cm) because of nearby irrigation and irrigation canals. (Colors are for dry soil unless otherwise noted.)

Ap1—0 to 3 inches (0 to 8 cm); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; 24 percent clay; moderate fine and medium subangular blocky structure; very hard, firm, nonsticky, slightly plastic; common very fine and few fine roots; many very fine and fine tubular pores; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

Ap2—3 to 6 inches (8 to 15 cm); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; 25 percent clay; moderate coarse subangular blocky structure parting to medium subangular blocky; very hard, firm, nonsticky, slightly plastic; common very fine and few fine roots; many very fine and fine, common medium, and few coarse tubular pores; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

Bt1—6 to 14 inches (15 to 36 cm); pale brown (10YR 6/3) clay loam, brown (10YR 4/3) moist; 28 percent clay; weak medium subangular blocky structure; very hard, firm, slightly sticky, slightly plastic; common very fine and few fine roots; many very fine and fine, common medium, and few coarse tubular pores; few patchy

distinct clay films on faces of peds and in pores; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt2—14 to 29 inches (36 to 74 cm); light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; 30 percent clay; moderate medium subangular blocky structure; very hard, firm, slightly sticky, moderately plastic; common fine roots; many very fine and fine and common medium tubular pores; common discontinuous distinct clay films on faces of peds and in pores; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt3—29 to 53 inches (74 to 135 cm); light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; 28 percent clay; moderate medium subangular blocky structure; very hard, firm, slightly sticky, moderately plastic; few fine to coarse roots; many very fine and fine and common medium tubular pores; common discontinuous distinct clay films on faces of peds and in pores; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt4—53 to 73 inches (135 to 185 cm); light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; 26 percent clay; weak medium subangular blocky structure; very hard, firm, slightly sticky, moderately plastic; few fine to coarse roots; many very fine and fine and common medium tubular pores; few fine black (N 2/0 moist) irregularly shaped iron-manganese masses throughout; few discontinuous distinct clay films in root channels and pores; slightly acid, pH 6.5 by Hellige-Truog; abrupt wavy boundary.

2Cd—73 to 80 inches (185 to 203 cm); dark yellowish brown (10YR 4/4) loam, olive brown (2.5Y 4/4) moist; 18 percent clay; noncemented; massive; extremely hard, friable, nonsticky, slightly plastic; no roots; many very fine and fine and few medium tubular pores; common fine and medium dark yellowish brown (10YR 4/4 moist) irregular and threadlike oxidized iron masses on fragment faces and in pores; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Butte County, California; about 2 miles southeast of Gridley, approximately 1,050 feet east and 150 feet north of the intersection of Larkin Road and Clardy Avenue; T. 17 N., R. 3 E.; in an unsectionized area in the Boga Land Grant; 39 degrees, 20 minutes, 31 seconds north latitude and 121 degrees, 39 minutes, 17 seconds west longitude; NAD27; USGS Quad: Gridley, California.

Range in Characteristics

The depth to densic material is 60 to 80 inches (152 to 203 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from May to October (140 to 160 days). The particle-size control section averages 25 to 35 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 3 percent to a depth of 6 inches (15 cm). A fluctuating water table can occur between the top of the densic material and 20 inches (51 cm) below the surface of the soil from December through May.

The Ap horizon has dry color of 10YR 5/3, 5/4, or 6/3. Moist color is 10YR 4/3 or 4/2. Texture is loam or silt loam. The content of clay ranges from 18 to 27 percent. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 5/3, 5/4, 5/6, 6/4, or 6/6. Moist color is 10YR 4/2, 4/3, 4/4, 5/3, or 5/4 or 7.5YR 4/3. Texture is loam, silt loam, silty clay loam, or clay loam. The content of clay ranges from 20 to 40 percent. The content of sand ranges from 15 to 50 percent. Redoximorphic features, such as iron-manganese masses (N 2/0 moist) and oxidized iron masses (10YR 4/6; 7.5YR 4/4, 4/6, or 5/6; 5YR 4/6; or 5/6 moist), occur below a depth of 40 inches (102 cm). Reaction ranges from slightly acid to slightly alkaline.

The 2Cd horizon has dry color of 2.5Y 7/4, 7/3, 6/4 or 10YR 4/4 or 6/4. Moist color is 2.5Y 4/4, 5/3, or 5/4 or 10YR 4/4. Texture is loam, silt loam, silt, very fine sandy loam, or fine sandy loam. The content of clay ranges from 5 to 20 percent.

Redoximorphic features, such as iron-manganese masses (N 2/0 moist) and oxidized iron masses (10YR 4/6; 7.5YR 4/4, 4/6, or 5/6; or 5YR 4/6 or 5/6 moist), occur in pores and on fragment faces. Rupture resistance ranges from slightly hard to very hard and varies within the horizon at any given point. The densic material does not slake in water, and the cementation class is noncemented. This material generally has many very fine and fine tubular pores that appear to be remnant root channels. Reaction ranges from slightly acid to moderately alkaline.

Bonepile Series

The Bonepile series consists of deep, well drained soils that formed in tephra over residuum derived from volcanic rocks. These soils are on the top of volcanic ridges in the Cascade Mountains. Slopes range from 2 to 30 percent. The mean annual precipitation is about 75 inches (1,905 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Medial-skeletal, glassy, frigid Typic Haploxerands

Typical Pedon

Bonepile gravelly medial loam, on a west-facing slope of 5 percent, under a cover of planted ponderosa pine, at an elevation of 5,140 feet (1,567 m). When described on 9/23/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); litter of needles and leaves.

A1—1 to 3 inches (3 to 8 cm); brown (7.5YR 5/2) gravelly medial loam, dark brown (7.5YR 3/2) moist; 18 percent clay; weak fine granular structure; loose, nonsticky, nonplastic; many very fine and common fine roots; many very fine and fine irregular and tubular pores; noneffervescent; 15 percent subangular gravel; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 10.5; gradual smooth boundary.

A2—3 to 9 inches (8 to 23 cm); brown (7.5YR 4/3) cobbly medial loam, dark brown (7.5YR 3/2) moist; 15 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine and fine irregular and tubular pores; noneffervescent; 15 percent subangular gravel and 15 percent subangular cobbles; strongly acid, pH 5.1 by pH meter 1:1 water; NaF pH 11.0; gradual smooth boundary.

Bw1—9 to 18 inches (23 to 46 cm); brown (7.5YR 5/3) gravelly medial loam, dark brown (7.5YR 3/4) moist; 16 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine and few medium roots; many very fine and fine irregular and tubular pores; noneffervescent; 30 percent subangular gravel; very strongly acid, pH 5.0 by pH meter 1:1 water; NaF pH 10.9; gradual smooth boundary.

Bw2—18 to 30 inches (46 to 76 cm); brown (7.5YR 5/4) very gravelly medial loam, dark brown (7.5YR 3/4) moist; 16 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine, common fine and medium, and few coarse roots; many very fine and fine irregular and tubular pores; noneffervescent; 25 percent subangular gravel and 10 percent subangular cobbles; very strongly acid, pH 4.9 by pH meter 1:1 water; NaF pH 10.7; gradual smooth boundary.

2Bw3—30 to 44 inches (76 to 112 cm); brown (7.5YR 5/4) very gravelly medial loam, dark brown (7.5YR 3/4) moist; 23 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine to medium and few coarse roots; many very fine and fine irregular and tubular pores; noneffervescent; 30 percent subangular gravel, 10 percent subangular

cobbles, and 10 percent subangular boulders; very strongly acid, pH 4.8 by pH meter 1:1 water; NaF pH 10.4; gradual smooth boundary.

2Cr—44 inches (112 cm); very weakly cemented andesite; roots occurring more than 4 inches (10 cm) apart.

Type location: Butte County, California; about 3 miles north of Inskip, approximately 600 feet north and 1,200 feet west of the southeast corner of sec. 9, T. 25 N., R. 4 E.; 40 degrees, 1 minute, 57 seconds north latitude and 121 degrees, 31 minutes, 35.3 seconds west longitude; NAD83; USGS Quad: Butte Meadows, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 41 to 47 degrees F (5 to 8 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 10 to 20 percent clay and 15 to 35 percent rock fragments, mostly gravel, in the upper part and 12 to 25 percent clay and 35 to 50 percent rock fragments, mostly gravel, in the lower part. Mineralogy is glassy. Acid oxalate extractable Al plus 1/2 Fe ranges from 2.0 to 2.75 to a depth of 30 inches (76 cm). By ammonium acetate, CEC ranges from 35.5 in the A1 horizon to 16.4 in the 2Bw3 horizon. P retention ranges from 92 to 98 between 1 and 30 inches (2.5 to 76 cm). Rock fragments on the surface range from 5 to 35 percent gravel, 0 to 35 percent cobbles, 0 to 30 percent stones, and 0 to 30 percent boulders.

The A horizon has dry color of 7.5YR 4/2, 4/3, 4/4, 5/2, or 5/3 or 10YR 4/2, 5/2, or 5/4. Moist color is 7.5YR 3/2, 3/3, or 3/4; 5YR 3/2 or 3/3; or 10YR 2/2. Texture is gravelly or cobbly medial loam, gravelly or cobbly medial sandy loam, or gravelly or cobbly medial fine sandy loam. The content of clay ranges from 10 to 20 percent. The horizon has 15 to 35 percent gravel, 0 to 15 percent cobbles, and 0 to 10 percent stones. The content of organic matter is 10 to 15 percent. NaF pH is 10 to 11.5. Reaction ranges from strongly acid to slightly acid.

The upper part of the Bw horizon has dry color of 7.5YR 4/3, 4/4, 5/3, or 5/4. Moist color is 7.5YR 3/3 or 3/4 or 5YR 3/4 or 4/3. Texture is gravelly medial loam, gravelly medial sandy loam, gravelly medial fine sandy loam, or very gravelly medial sandy loam. The content of clay ranges from 10 to 20 percent. The content of gravel is 15 to 35 percent, the content of cobbles is 0 to 10 percent, and the content of stones is 0 to 10 percent. The content of organic matter is 5 to 10 percent. NaF pH is 10.5 to 11.5. Reaction ranges from very strongly acid to slightly acid.

The lower part of the Bw horizon has dry color of 7.5YR 4/4, 5/4, or 6/4 or 10YR 5/4 or 4/4. Moist color is 7.5YR 3/4 or 4/3 or 10YR 4/4. Texture is gravelly or cobbly medial sandy loam, gravelly or cobbly medial fine sandy loam, gravelly or cobbly medial loam, or very gravelly or very cobbly medial loam. The content of clay ranges from 12 to 20 percent. The content of gravel is 20 to 50 percent, the content of cobbles is 0 to 30 percent, and the content of stones is 0 to 10 percent. The content of organic matter is 3 to 5 percent. NaF pH is 10.0 to 11.0. Reaction is very strongly acid or strongly acid.

The 2Bw horizon has dry color of 7.5YR 4/4, 5/3, 5/4, 5/6, 6/3, 6/4, 6/6, or 7/6 or 5YR 5/3 or 4/6. Moist color is 7.5YR 3/4 or 4/4 or 5YR 4/3, 4/4, or 4/6. Texture is gravelly or cobbly medial loam, gravelly or cobbly medial sandy loam, very gravelly or very cobbly medial loam, very gravelly or very cobbly medial sandy loam, or extremely gravelly or extremely cobbly medial sandy loam. The content of clay ranges from 15 to 25 percent. The horizon has 15 to 70 percent gravel, 0 to 30 percent cobbles, and 0 to 20 percent stones. The content of organic matter is 0.5 to 3 percent. NaF pH is 9.0 to 10.5. Reaction ranges from extremely acid to strongly acid.

Bonepile Taxadjunct

The Bonepile taxadjunct consists of deep, moderately well drained soils that formed in alluvium derived from volcanic rocks. These soils are on stream terraces in valleys in the Cascade Mountains. Slopes range from 2 to 8 percent. The mean annual precipitation is about 72 inches (1,829 mm), and the mean annual air temperature is about 50 degrees F (10 degrees C).

Taxonomic class: Loamy-skeletal, isotic, mesic Ultic Haploxerands

Typical Pedon

Bonepile taxadjunct, on a south-facing slope of 2 percent, under a cover of incense cedar, ponderosa pine, white fir, Douglas-fir, and sugar pine, at an elevation of 4,395 feet (1,339 m). When described on 6/26/1997, the soil was very slightly moist to a depth of 7 inches (18 cm), dry from 7 to 37 inches (18 to 94 cm), and slightly moist below 37 inches (94 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A1—1 to 4 inches (3 to 10 cm); brown (7.5YR 5/3) gravelly medial sandy loam, dark brown (7.5YR 3/2) moist; 13 percent clay; weak fine and medium granular structure; loose, nonsticky, nonplastic; many very fine and fine and common medium roots; many very fine to medium irregular and tubular pores; 25 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 10.2; clear smooth boundary.

A2—4 to 7 inches (10 to 18 cm); light brown (7.5YR 6/3) very gravelly medial sandy loam, dark brown (7.5YR 3/2) moist; 15 percent clay; weak very fine granular structure; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine to medium tubular and irregular pores; 5 percent cobbles and 35 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; NaF pH 11.0; clear smooth boundary.

AB—7 to 15 inches (18 to 38 cm); light brown (7.5YR 6/3) very gravelly medial sandy loam, dark brown (7.5YR 3/2) moist; 17 percent clay; weak very fine granular structure; loose, slightly sticky, slightly plastic; many very fine to medium and few coarse roots; many very fine to medium tubular and irregular pores; 10 percent cobbles and 40 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 11.0; gradual smooth boundary.

Bw1—15 to 30 inches (38 to 76 cm); yellowish brown (10YR 5/4) extremely gravelly sandy loam, brown (7.5YR 4/3) moist; 18 percent clay; weak very fine granular structure; loose, slightly sticky, slightly plastic; many very fine to coarse roots; many very fine to medium tubular and irregular pores; 10 percent stones, 20 percent cobbles, and 40 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; NaF pH 11.0; gradual smooth boundary.

Bw2—30 to 37 inches (76 to 94 cm); pink (7.5YR 7/3) extremely cobbly sandy clay loam, brown (7.5YR 4/3) moist; 21 percent clay; weak fine subangular blocky structure; loose, slightly sticky, slightly plastic; many fine and medium roots; many very fine to medium tubular and irregular pores; 10 percent stones, 30 percent gravel, and 30 percent cobbles; neutral, pH 7.2 by Hellige-Truog; NaF pH 10.5; gradual smooth boundary.

2Bt—37 to 47 inches (94 to 119 cm); brown (7.5YR 4/3) extremely gravelly clay loam, brown (10YR 4/3) moist; 29 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common fine and medium roots; many very fine to medium tubular and irregular pores; 60 percent continuous distinct clay films; 20 percent coarse manganese

coatings; 10 percent stones, 30 percent cobbles, and 40 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.0; abrupt smooth boundary.
2Bqm—47 inches (119 cm); moderately cemented duripan; 70 percent coarse manganese coatings.

Type location: Butte County, California; about 0.9 mile east of Butte Meadows, approximately 1,400 feet south and 1,870 feet east of the northwest corner of sec. 28, T. 26 N., R. 4 E.; 40 degrees, 4 minutes, 56 seconds north latitude and 121 degrees, 32 minutes, 4 seconds west longitude; NAD27; USGS Quad: Butte Meadows, California.

Range in Characteristics

Depth to the duripan is 40 to 60 inches (102 to 152 centimeters). The mean annual soil temperature is 47 to 50 degrees F (8 to 10 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 12 to 20 percent clay and 50 to 80 percent rock fragments. Mineralogy is isotic. A fluctuating water table can occur at a depth of 37 to 72 inches (94 to 183 centimeters) from December through June, 59 to 98 inches (150 to 249 centimeters) in July, 79 to 144 inches (200 to 365 centimeters) from August through October, and 59 to 144 inches (150 to 365 centimeters) in November. Redoximorphic features, such as manganese coatings, occur in the 2Bt and 2Bqm horizons. Rock fragments on the surface range from 10 to 40 percent gravel, 0 to 25 percent cobbles, 0 to 40 percent stones, and 0 to 20 percent boulders.

The A horizon has dry color of 7.5YR 4/3, 5/3, or 6/3 or 10YR 5/3. Moist color is 7.5YR 3/2 or 3/3 or 5YR 3/3. Texture is gravelly medial fine sandy loam, very gravelly medial fine sandy loam, gravelly medial sandy loam, very gravelly medial sandy loam, very stony medial sandy loam, or extremely stony medial sandy loam. The content of clay ranges from 10 to 20 percent. The horizon has 15 to 40 percent gravel, 0 to 25 percent cobbles, 0 to 25 percent stones, and 0 to 10 percent boulders. NaF pH is 10.0 to 11.5. Reaction is slightly acid or moderately acid.

The AB horizon has dry color of 7.5YR 5/3 or 6/3. Moist color is 7.5YR 3/2 or 3/3. Texture is very gravelly medial sandy loam, very gravelly medial loam, very cobbly medial sandy loam, or very stony medial sandy loam. The content of clay ranges from 10 to 20 percent. The horizon has 15 to 40 percent gravel, 5 to 20 percent cobbles, 0 to 25 percent stones, and 0 to 5 percent boulders. NaF pH is 10.0 to 11.0. Reaction is slightly acid or moderately acid.

The Bw horizon has dry color of 7.5YR 6/6 or 7/3 or 10YR 5/4. Moist color is 7.5YR 4/3. Texture is extremely gravelly sandy loam, extremely gravelly loam, extremely cobbly sandy clay loam, or extremely stony sandy loam. The content of clay ranges from 12 to 25 percent. The horizon has 15 to 40 percent gravel, 15 to 35 percent cobbles, 5 to 25 percent stones, and 0 to 5 percent boulders. NaF pH is 10.0 to 11.0. Reaction is slightly acid or neutral.

The 2Bt horizon has dry color of 7.5YR 4/3 or 10YR 5/6. Moist color is 10YR 4/3 or 4/4. Texture is extremely gravelly sandy loam, extremely gravelly loam, extremely gravelly sandy clay loam, extremely gravelly clay loam, or extremely stony sandy loam. The content of clay ranges from 15 to 30 percent. The horizon has 25 to 45 percent gravel, 15 to 35 percent cobbles, 5 to 25 percent stones, and 0 to 5 percent boulders. NaF pH is 9.0 to 10.0. Reaction is slightly acid or moderately acid.

The Bonepile taxadjunct is a taxadjunct because it is loamy-skeletal, has a mesic soil temperature regime, and is underlain by a duripan. These differences do not significantly affect the use, management, or interpretations of the soils.

Bonneyridge Series

The Bonneyridge series consists of very deep, somewhat excessively drained soils that formed in colluvium and residuum derived from quartz diorite. These soils are on ridgetops and side slopes on granitic Sierra Nevada mountains. Slopes range from 1 to 110 percent. The mean annual precipitation is about 75 inches (1,905 mm), and the mean annual air temperature is about 52 degrees F (11 degrees C).

Taxonomic class: Coarse-loamy, isotic, mesic Typic Dystroxerepts

Typical Pedon

Bonneyridge sandy loam, on an east-facing convex slope of 25 percent, under mixed conifers, at an elevation of 4,175 feet (1,272 m). When described on 9/25/1996, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 2.5 cm); fresh and slightly decomposed plant material.

A1—1 to 3 inches (2.5 to 7.6 cm); grayish brown (10YR 5/2) sandy loam, black (10YR 2/1) moist; 10 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine and fine roots; many very fine interstitial pores; common mica flakes; noneffervescent; 5 percent subrounded gravel; slightly acid, pH 6.5 by pH meter 1:1 water; NaF pH 12.0; abrupt smooth boundary.

A2—3 to 6 inches (7.6 to 15 cm); grayish brown (10YR 5/2) sandy loam, black (10YR 2/1) moist; 8 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine and medium roots; many very fine interstitial pores; common mica flakes; noneffervescent; 10 percent subrounded gravel; slightly acid, pH 6.5 by pH meter 1:1 water; NaF pH 11.5; abrupt smooth boundary.

Bw1—6 to 16 inches (15 to 41 cm); light brownish gray (10YR 6/2) coarse sandy loam, brown (10YR 4/3) moist; 6 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common fine and medium and few coarse roots; many very fine interstitial pores; common mica flakes; noneffervescent; 5 percent subrounded gravel; slightly acid, pH 6.3 by pH meter 1:1 water; NaF pH 11.0; clear smooth boundary.

Bw2—16 to 22 inches (41 to 56 cm); pale brown (10YR 6/3) coarse sandy loam, brown (10YR 4/3) moist; 8 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; few coarse roots; many very fine interstitial pores; common mica flakes; noneffervescent; 5 percent subrounded gravel; moderately acid, pH 5.8 by pH meter 1:1 water; NaF pH 10.0; clear smooth boundary.

Bw3—22 to 31 inches (56 to 79 cm); pale brown (10YR 6/3) coarse sandy loam, brown (10YR 4/3) moist; 8 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; few fine roots; many very fine interstitial pores; common mica flakes; noneffervescent; 10 percent subrounded gravel; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.0; gradual smooth boundary.

Bw4—31 to 39 inches (79 to 99 cm); very pale brown (10YR 7/3) sandy loam, brown (10YR 5/3) moist; 10 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; few fine and medium roots; many very fine interstitial pores; common mica flakes; noneffervescent; slightly acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.0; gradual smooth boundary.

C1—39 to 56 inches (99 to 142 cm); very pale brown (10YR 7/3) loamy coarse sand, brown (10YR 5/3) moist; 5 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; few fine and medium roots; many very fine interstitial pores; common mica flakes; noneffervescent;

moderately acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.0; clear smooth boundary.

C2—56 to 76 inches (142 to 193 cm); very pale brown (10YR 8/2) gravelly loamy coarse sand, pale brown (10YR 6/3) moist; 5 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; few fine and medium roots; many very fine interstitial pores; common mica flakes; noneffervescent; 16 percent subrounded gravel; moderately acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.0.

Type location: Plumas County, California; about 3 miles southeast of Cascade, approximately 1,100 feet north and 650 feet east of the southwest corner of sec. 18, T. 21 N., R. 8 E.; 39 degrees, 40 minutes 26.8 seconds north latitude and 121 degrees, 8 minutes, 0.2 second west longitude; NAD83; USGS Quad: Cascade, California.

Range in Characteristics

The depth to paralithic bedrock (quartz diorite) is more than 60 inches (152 cm). The mean annual soil temperature is 52 to 56 degrees F (11 to 13 degrees C). The soil moisture control section is dry in all parts from about July 1 to October 1 (about 90 days). The particle-size control section averages 5 to 18 percent clay and 4 to 10 percent rock fragments, mostly gravel. Mineralogy is isotic. By ammonium acetate, base saturation ranges from 55 to 100 percent from 10 to 30 inches (25 to 76 cm). Acid oxalate extractable Al plus ½ Fe ranges from 0.75 to 1.0 to a depth of 6 inches (15 cm). Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones.

The A horizon has dry color of 10YR 5/2, 5/3, 5/4, 5/6, 6/2, 6/3, 6/4, or 8/2. Moist color is 10YR 2/1, 2/2, 3/2, 3/3, 4/2, 4/3, or 5/2. Texture is sandy loam, coarse sandy loam, gravelly sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 5 to 15 percent. The horizon has 0 to 25 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 2 to 8 percent. NaF pH is 10.0 to 12.0. Reaction ranges from moderately acid to neutral.

The Bw horizon has dry color of 10YR 6/2, 6/3, 6/4, 7/3, 7/4, 8/2, or 8/3 or 2.5Y 7/4. Moist color is 10YR 3/4, 4/3, 4/4, 4/6, 5/2, 5/3, 5/4, 5/6, 6/3, or 6/4 or 2.5Y 5/4 or 6/4. Texture is sandy loam, coarse sandy loam, gravelly sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 5 to 18 percent. The horizon has 0 to 30 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 0.6 to 6 percent. NaF pH is less than 9 to 11.5. Reaction ranges from strongly acid to slightly acid.

The C horizon has dry color of 10YR 6/2, 7/3, 7/4, 8/1, 8/2, or 8/3 or 2.5Y 7/4. Moist color is 10YR 4/2, 5/3, 5/4, 5/6, 6/3, 6/4, 6/6, 7/2, or 8/2 or 2.5Y 5/4 or 6/4. Texture is loamy coarse sand, gravelly loamy coarse sand, sandy loam, loamy sand, or gravelly sandy loam. The content of clay ranges from 5 to 18 percent. The content of gravel is 0 to 30 percent. The content of organic matter is 0.1 to 0.6 percent. NaF pH is less than 9.0 to 10.5. Reaction is strongly acid or moderately acid.

Bosquejo Series

The Bosquejo series consists of very deep, somewhat poorly drained soils that formed in alluvium weathered from volcanic rocks. These soils are in interfan basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Typic Haploxererts

Typical Pedon

Bosquejo clay, on a slope of less than 1 percent, under a cover of barley, at an elevation of 144 feet (44 m). When described on 6/16/1993, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

Ap—0 to 8 inches (0 to 20 cm); brown (7.5YR 5/2) clay, dark brown (7.5YR 3/2) moist; 47 percent clay; moderate coarse prismatic structure; hard, firm, very sticky, very plastic; common very fine roots; common very fine tubular pores; few fine black (N 2/0 moist) rounded iron-manganese concretions throughout; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bss1—8 to 19 inches (20 to 48 cm); brown (7.5YR 5/2) clay, dark brown (7.5YR 3/2) moist; 51 percent clay; moderate medium prismatic structure; hard, firm, very sticky, very plastic; few very fine roots; common very fine tubular pores; common intersecting slickensides; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bss2—19 to 24 inches (48 to 61 cm); brown (7.5YR 4/2) clay, dark brown (7.5YR 3/2) moist; 54 percent clay; strong medium prismatic structure; hard, firm, very sticky, very plastic; few very fine roots; common very fine tubular pores; common intersecting slickensides; very slightly effervescent throughout; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

2Bk—24 to 37 inches (61 to 94 cm); brown (7.5YR 5/2) silty clay, dark brown (7.5YR 3/4) moist; 43 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine roots; common very fine and few fine tubular pores; violently effervescent throughout; common fine cylindrical carbonate masses; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

2Bw1—37 to 44 inches (94 to 112 cm); brown (10YR 5/3) clay loam, dark brown (7.5YR 3/4) moist; 30 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine roots; common very fine tubular pores; very slightly effervescent throughout; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

2Bw2—44 to 46 inches (112 to 117 cm); brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; 22 percent clay; weak medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; very slightly effervescent throughout; moderately alkaline, pH 8.0 by Hellige-Truog; gradual smooth boundary.

2Bq—46 to 60 inches (117 to 152 cm); brown (7.5YR 4/4) loam, dark brown (7.5YR 3/4) moist; 24 percent clay; weak fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine tubular pores; 5 percent fine rounded slightly cemented durinodes; few fine black (N 2/0 moist) iron-manganese nodules throughout; very slightly effervescent throughout; moderately alkaline, pH 8.0 by Hellige-Truog.

Type location: Butte County, California; about 1.25 miles southeast of Nord, approximately 1,150 feet south and 150 feet east of the northwest corner of sec. 13, T. 22 N., R. 1 W.; 39 degrees, 45 minutes, 54 seconds north latitude and 121 degrees, 56 minutes, and 11 seconds west longitude; NAD27; USGS Quad: Nord, California.

Range in Characteristics

The soils are more than 60 inches (152 cm) deep. The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 130 to 150 days). The particle-size control section averages 40 to 50 percent clay. Mineralogy is smectitic. The content of organic matter is 1 to 5 percent to a depth of 24 inches (61 cm). Surface-initiated, reversible cracks 0.25 to 1 inch (0.6 to 2.5 cm) wide extend to a

depth of about 25 inches from May 15 to October 15 (about 150 days) when the soils are not irrigated. Intersecting slickensides occur in the Bss1 and Bss2 horizons, from about 6 to 30 inches (15 to 76 cm). A fluctuating water table can occur at a depth of 12 to 60 inches (30 to 152 cm) from December through May. Where they occur, redoximorphic features, such as oxidized iron masses with color of 7.5YR 3/4, 4/4, 4/6, or 5/6 moist, are in the 2Bw and 2Bq horizons and iron-manganese nodules are throughout the profile. Some pedons have overwash of silt loam 6 to 20 inches (15 to 51 cm) thick.

The Ap horizon has dry color of 7.5YR 4/2 or 5/2 or 10YR 4/2 or 5/2. Moist color is 7.5YR 3/2 or 4/2 or 10YR 3/2 or 3/3. Texture is most commonly clay, but the range includes silt loam and clay loam. The content of clay ranges from 18 to 50 percent. Reaction is slightly acid or neutral.

The Bss horizon has dry color of 7.5YR 4/2 or 5/2 or 10YR 4/2 or 5/2. Moist color is 7.5YR 4/2 or 5/2 or 10YR 4/2 or 5/2. Texture is clay or silty clay. The content of clay ranges from 40 to 55 percent. Reaction is neutral or slightly alkaline.

The 2Bk horizon has dry color of 7.5YR 5/2 or 5/3 or 10YR 5/2 or 5/3. Moist color is 7.5YR 3/3, 3/4, 4/3, or 4/4 or 10YR 3/3, 3/4, 4/3, or 4/4. Texture is clay loam, silty clay loam, or silty clay. The content of clay ranges from 30 to 45 percent. Reaction is slightly alkaline or moderately alkaline.

The 2Bw1 and 2Bw2 horizons have dry color of 7.5YR 5/2 or 5/3 or 10YR 5/2 or 5/3. Moist color is 7.5YR 3/4, 4/3, or 4/4 or 10YR 3/4, 4/3, or 4/4. Texture is clay loam or loam. The content of clay ranges from 20 to 35 percent. Reaction ranges from neutral to moderately alkaline.

The 2Bq horizon has dry color of 7.5YR 5/2 or 5/3 or 10YR 5/2 or 5/3. Moist color is 7.5YR or 10YR 3/4, 4/3, or 4/4. Texture is loam. The content of clay ranges from 18 to 27 percent. Reaction ranges from neutral to moderately alkaline.

Bosquejo Taxadjunct

The Bosquejo taxadjunct consists of deep or very deep, somewhat poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are on stream terraces on Southern Cascade foothills. Slopes range from 0 to 2 percent. The mean annual precipitation is about 27 inches (686 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Chromic Haploxererts

Typical Pedon

Bosquejo taxadjunct, on a west-facing slope of 1 percent, under a cover of medusahead, lupine, clover, and plantain, at an elevation of 221 feet (67 m). When described on 4/10/2001, the soil was moist to a depth of 27 inches (69 cm) and slightly moist from 27 to 81 inches (69 to 206 cm). (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches (0 to 8 cm); grayish brown (10YR 5/2) clay, dark grayish brown (10YR 4/2) moist; 55 percent clay; strong fine and medium subangular blocky structure; extremely hard, friable, very sticky, very plastic; many very fine and fine roots; few very fine and fine tubular, many very fine to medium irregular, and common coarse irregular pores; 5 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

A2—3 to 8 inches (8 to 20 cm); grayish brown (10YR 5/2) clay, dark grayish brown (10YR 4/2) moist; 60 percent clay; strong coarse prismatic structure parting to strong medium and coarse subangular blocky; extremely hard, friable, very sticky, very plastic; common very fine and fine roots; common very fine to medium

tubular and irregular pores; 5 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bss1—8 to 17 inches (20 to 43 cm); dark grayish brown (10YR 4/2) clay, dark grayish brown (10YR 4/2) moist; 60 percent clay; strong medium and coarse subangular blocky structure; extremely hard, friable, very sticky, very plastic; common very fine roots; common very fine and fine tubular and irregular pores; 20 percent slickensides; 5 percent gravel; neutral, pH 7.3 by Hellige-Truog; gradual smooth boundary.

Bss2—17 to 27 inches (43 to 69 cm); grayish brown (10YR 5/2) clay, dark grayish brown (10YR 4/2) moist; 60 percent clay; strong fine and medium angular blocky structure; extremely hard, friable, very sticky, very plastic; few very fine roots; few very fine and fine tubular pores; 30 percent slickensides; 5 percent gravel; slightly alkaline, pH 7.8 by Hellige-Truog; clear irregular boundary.

2Btq1—27 to 33 inches (69 to 84 cm); pale brown (10YR 6/3) gravelly clay, yellowish brown (10YR 5/4) moist; 42 percent clay; strong fine and medium subangular blocky structure; extremely hard, friable, very sticky, very plastic; few very fine roots; few very fine and fine tubular pores; 60 percent continuous distinct clay films on faces of peds; 5 percent fine threadlike silica masses on surfaces along pores; 15 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

2Btq2—33 to 41 inches (84 to 104 cm); very pale brown (10YR 7/4) very gravelly sandy clay, yellowish brown (10YR 5/4) moist; 40 percent clay; massive; hard, friable, moderately sticky, moderately plastic; few very fine roots; common very fine and fine interstitial and tubular pores; 100 percent continuous distinct clay films; 10 percent fine threadlike silica masses on surfaces along pores; 1 percent cobbles and 60 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

2Btq3—41 to 55 inches (104 to 140 cm); pale brown (10YR 6/3) very gravelly sandy clay, yellowish brown (10YR 5/4) moist; 37 percent clay; massive; slightly hard, friable, moderately sticky, moderately plastic; few very fine roots; many very fine to medium interstitial pores; 100 percent continuous distinct clay films; 5 percent fine threadlike silica masses on surfaces along pores; 5 percent cobbles and 60 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

3Bdq1—55 to 70 inches (140 to 178 cm); very pale brown (10YR 8/3) sandy loam, yellowish brown (10YR 5/4) moist; 19 percent clay; massive parting to weak medium and coarse subangular blocky structure; hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium tubular pores; 5 percent fine threadlike silica masses lining pores; 1 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

3Bdq2—70 to 81 inches (178 to 206 cm); very pale brown (10YR 8/3) sandy loam, yellowish brown (10YR 5/4) moist; 16 percent clay; massive; hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium tubular pores; 1 percent coarse irregular silica masses around rock fragments; 2 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog;

Type location: Butte County, California; about 1.12 miles south-southwest of the intersection of Durham Pentz Road and Williams Road, approximately 290 feet north and 2,275 feet west of the southeast corner of sec. 32, T. 21 N., R. 3 E.; 39 degrees, 37 minutes, 33 seconds north latitude and 121 degrees, 39 minutes, 48 seconds west longitude; NAD83; USGS Quad: Hamlin Canyon, California.

Range in Characteristics

The depth to densic material is 40 to 80 inches (102 to 203 cm). This material is underlain by volcanic sandstone. The mean annual soil temperature is 63 to 64

degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 180 days). The particle-size control section averages 40 to 60 percent clay and 0 to 25 percent rock fragments, mostly gravel. Mineralogy is smectitic. Surface-initiated, reversible cracks 1 to 2 inches (2.5 to 5 cm) wide extend to a depth of 25 to 35 inches (64 to 89 cm) from May through November (200 to 240 days) when the soils are not irrigated. A fluctuating water table can occur at a depth of 12 to 60 inches (30 to 152 cm) from December through April. Redoximorphic features, such as iron masses, occur in the A horizon. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 3 percent cobbles.

The A horizon has dry color of 10YR 4/2 or 5/2 or 7.5YR 5/2 or 6/2. Moist color is 10YR 4/2 or 7.5YR 4/2. Texture is clay or silty clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 5 percent. Reaction ranges from slightly acid to slightly alkaline.

The Bss horizon has dry color of 10YR 4/2 or 7.5YR 5/3 or 6/3. Moist color is 10YR 4/2 or 7.5YR 4/3. Texture is clay or silty clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 10 percent. Reaction ranges from neutral to moderately alkaline.

The 2Btq horizon has dry color of 10YR 6/3, 6/4, 7/3, 7/4, 8/2, or 8/4 or 7.5YR 7/4. Moist color is 10YR 4/3, 5/3, or 5/4 or 7.5YR 4/3. Texture is gravelly clay, very gravelly sandy clay, extremely gravelly clay, extremely gravelly sandy clay loam, or extremely gravelly sandy clay. The content of clay ranges from 22 to 55 percent. The horizon has 0 to 90 percent gravel and 0 to 15 percent cobbles. Reaction ranges from neutral to strongly alkaline.

The 3Bdq horizon has dry color of 10YR 7/3, 7/4, or 8/3. Moist color is 10YR 4/3 or 5/4. Texture is sandy loam, sandy clay loam, or extremely gravelly sandy clay. The content of clay ranges from 15 to 40 percent. The horizon has 0 to 60 percent gravel and 0 to 20 percent cobbles. Reaction ranges from neutral to strongly alkaline.

The Bosquejo taxadjunct is a taxadjunct because it has a gravelly substratum and has densic contact within a depth of 60 inches. These differences do not significantly affect the use, management, or interpretations of the soils.

Bottlehill Series

The Bottlehill series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from metavolcanic and metasedimentary rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 110 percent. The mean annual precipitation is about 75 inches (1,905 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, mesic Xeric Haplohumults

Typical Pedon

Bottlehill very gravelly loam, on a south-facing slope of 7 percent, under a cover of mixed conifers, greenleaf manzanita, and prostrate ceanothus, at an elevation of 5,180 feet (1,579 m). When described on 9/23/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); litter of needles and leaves.
Oe—0.5 inch to 2 inches (1 to 4 cm); partially decomposed litter of needles and leaves.
A1—2 to 4 inches (4 to 11 cm); brown (10YR 5/3) very gravelly loam, very dark grayish brown (10YR 3/2) moist; 18 percent clay; moderate fine granular structure; soft, very friable, nonsticky, nonplastic; many very fine and fine and common medium roots; many very fine and fine irregular and tubular pores; 35

percent subangular gravel; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 9.6; clear smooth boundary.

A2—4 to 9 inches (11 to 22 cm); brown (10YR 5/3) very gravelly loam, very dark grayish brown (10YR 3/2) moist; 18 percent clay; weak fine granular structure; soft, very friable, nonsticky, nonplastic; many very fine and fine and common medium and coarse roots; many very fine and fine irregular and tubular pores; 45 percent subangular gravel; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 10.2; clear smooth boundary.

Bt1—9 to 13 inches (22 to 32 cm); very pale brown (10YR 7/4) very gravelly loam, brown (7.5YR 5/4) moist; 21 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine, common medium, and few coarse roots; common very fine and fine irregular and tubular pores; many distinct discontinuous clay films on faces of peds and in pores; 40 percent subangular gravel; strongly acid, pH 5.2 by pH meter 1:1 water; NaF pH 9.9; abrupt wavy boundary.

Bt2—13 to 22 inches (35 to 55 cm); very pale brown (10YR 8/4) very gravelly loam, yellowish brown (10YR 5/6) moist; 26 percent clay; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common very fine and fine roots; common very fine and fine irregular and tubular pores; many distinct continuous clay films on faces of peds and in pores; 50 percent subangular gravel and 10 percent subangular metamorphic cobbles; very strongly acid, pH 4.8 by pH meter 1:1 water; NaF pH 9.6; gradual smooth boundary.

Bt3—22 to 33 inches (55 to 85 cm); very pale brown (10YR 7/4) extremely gravelly clay loam, yellowish brown (10YR 5/6) moist; 31 percent clay; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common very fine and fine roots; common very fine and fine irregular and tubular pores; common distinct continuous clay films on faces of peds and in pores; 55 percent subangular gravel and 20 percent subangular cobbles; very strongly acid, pH 4.9 by pH meter 1:1 water; NaF pH 9.6; abrupt smooth boundary.

R—33 inches (85 cm); very strongly cemented metavolcanic rock; vertical beds 1 to 2 inches (2.5 to 5 cm) thick.

Type location: Butte County, California; about 2.1 miles north of Inskip, approximately 1,850 feet north and 1,350 feet east of the southwest corner of sec. 16, T. 25 N., R. 4 E.; 40 degrees, 1 minute, 18 seconds north latitude and 121 degrees, 32 minutes, 9.5 seconds west longitude; NAD83; USGS Quad: Butte Meadows, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 47 to 56 degrees F (8 to 13 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 18 to 30 percent clay and 35 to 65 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 35 to 75 percent gravel, 0 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 5 percent boulders. Some pedons have tephra-influenced A horizons.

The A horizon has dry color of 10YR 5/3, 6/2, 6/3, 6/4, or 7/3 or 7.5YR 6/3. Moist color is 10YR 3/2 or 4/3 or 7.5YR 4/3. Texture is very gravelly loam or very gravelly sandy loam. The content of clay ranges from 10 to 20 percent. The horizon has 35 to 60 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 10 to 20 percent. By sum of cations, base saturation ranges from 20 to 40 percent. Reaction ranges from strongly acid to slightly acid.

The upper part of the Bt horizon has dry color of 10YR 7/3, 7/4, 8/3, or 8/4 or 7.5YR 7/4. Moist color is 10YR 4/4, 5/4, or 5/6 or 7.5YR 4/3, 4/4, 4/6, 5/4, or 5/6.

Texture is very gravelly loam, very gravelly sandy loam, or extremely gravelly loam. The content of clay ranges from 15 to 27 percent. The content of gravel is 35 to 70 percent, the content of cobbles is 0 to 15 percent, and the content of stones is 0 to 5 percent. The content of organic matter is 1.5 to 10 percent. By sum of cations, base saturation ranges from 10 to 20 percent. Reaction ranges from very strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 10YR 7/4, 8/3, or 8/4. Moist color is 10YR 5/4, 5/6, 5/8, or 6/4 or 7.5YR 5/4. Texture is very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam, extremely gravelly loam, or extremely gravelly clay loam. The content of clay ranges from 18 to 35 percent. The content of gravel is 55 to 75 percent, the content of cobbles is 0 to 30 percent, and the content of stones is 0 to 30 percent. The content of organic matter is 0.5 to 3 percent. By sum of cations, base saturation ranges from 10 to 20 percent. Reaction ranges from very strongly acid to slightly acid.

Boxrobber Series

The Boxrobber series consists of shallow, well drained soils that formed in residuum and colluvium derived from ultramafic rocks. These soils are on ridgetops and side slopes on ultramafic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 52 inches (1,321 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, mesic, shallow Ultic Haploxeralfs

Typical Pedon

Boxrobber cobbly sandy clay loam, on a south-facing slope of 29 percent, under a cover of whiteleaf manzanita, foothill pine, blue oak, toyon, canyon live oak, and buckbrush, at an elevation of 2,340 feet (713 m). When described on 10/19/2000, the soil was moderately dry to a depth of 16 inches (41 cm) and dry below that depth. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); pink (7.5YR 7/3) cobbly sandy clay loam, brown (7.5YR 5/3) moist; 25 percent clay; moderate fine and medium subangular blocky structure parting to moderate fine and medium granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine to medium tubular and irregular pores; 10 percent gravel and 15 percent cobbles; slightly acid, pH 6.6 by Hellige-Truog; clear smooth boundary.

Bt1—2 to 8 inches (5 to 20 cm); pink (7.5YR 7/4) very gravelly sandy clay loam, brown (7.5YR 5/4) moist; 30 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium and few coarse roots; many very fine to medium tubular pores; 60 percent discontinuous distinct clay films; 15 percent cobbles and 25 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.

Bt2—8 to 16 inches (20 to 41 cm); light brown (7.5YR 6/4) very gravelly clay loam, strong brown (7.5YR 4/6) moist; 35 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 20 percent cobbles and 35 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; clear wavy boundary.

Crt—16 to 30 inches (41 to 76 cm); white (2.5Y 8/1), weakly cemented bedrock, pale yellow (2.5Y 7/3) moist; few very fine and fine roots; 20 percent continuous prominent clay films; neutral, pH 6.7 by Hellige-Truog; clear smooth boundary.

R—30 inches (76 cm); white (5Y 8/1), very strongly cemented bedrock, pale olive (5Y 6/3) moist; few very fine to medium roots; neutral, pH 6.8 by Hellige-Truog.

Type location: Butte County, California; about 0.75 mile east of Concow School, approximately 1,200 feet north and 2,400 feet west of the southeast corner of sec. 27, T. 22 N., R. 4 E.; 39 degrees, 43 minutes, 48 seconds north latitude and 121 degrees, 30 minutes, 50 seconds west longitude; NAD83; USGS Quad: Cherokee, California.

Range in Characteristics

The depth to paralithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 54 to 59 degrees F (12 to 15 degrees C). The particle-size control section averages 27 to 35 percent clay and 35 to 50 percent rock fragments, mostly gravel. Mineralogy is mixed but is affected by magnesium-rich minerals in the series control section. Rock fragments on the surface range from 5 to 60 percent gravel, 5 to 30 percent cobbles, 5 to 20 percent stones, and 3 to 15 percent boulders.

The A horizon has dry color of 7.5YR 6/4, 7/3, 7/4, or 8/3. Moist color is 7.5YR 4/3, 5/3, or 5/4. Texture is cobbly sandy clay loam, gravelly sandy clay loam, cobbly loam, gravelly loam, or very cobbly loam. The content of clay ranges from 22 to 30 percent. The horizon has 10 to 15 percent gravel, 0 to 25 percent cobbles, and 0 to 5 percent stones. Reaction is neutral or slightly acid.

The Bt horizon has dry color of 7.5YR 6/4, 7/4, 7/6, or 8/4. Moist color is 7.5YR 3/4, 4/4, 4/6, 5/4, or 6/6. Texture is very gravelly sandy clay loam, very gravelly clay loam, gravelly clay loam, or very cobbly clay loam. The content of clay ranges from 27 to 35 percent. The horizon has 15 to 35 percent gravel, 0 to 25 percent cobbles, and 0 to 5 percent stones. Reaction is neutral or slightly acid.

Busacca Series

The Busacca series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on distal alluvial fans. Slopes are 0 to 1 percent. The mean annual precipitation is about 24 inches (610 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, mixed, superactive, thermic Pachic Haploxerolls

Typical Pedon

Busacca clay loam, on a slope of less than 1 percent, under a cover of irrigated pasture grasses, at an elevation of 157 feet (48 m). When described on 7/20/1993, the soil was slightly moist to a depth of 72 inches (183 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 3 inches (0 to 8 cm); dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; 35 percent clay; moderate medium platy structure; extremely hard, slightly rigid, moderately sticky, very plastic; common very fine and few fine and medium roots; common very fine and fine tubular pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

A—3 to 8 inches (8 to 20 cm); dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; 35 percent clay; strong coarse prismatic structure parting to strong fine and medium granular; extremely hard, slightly rigid, moderately sticky, very plastic; common very fine and few fine and medium roots; common very fine and fine tubular pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bw1—8 to 16 inches (20 to 41 cm); brown (10YR 4/3) clay loam, dark brown (10YR 3/3) moist; 35 percent clay; strong coarse prismatic structure parting to strong

fine angular blocky; extremely hard, slightly rigid, moderately sticky, very plastic; common very fine and few fine and medium roots; few very fine and fine tubular pores; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

Bw2—16 to 28 inches (41 to 71 cm); brown (10YR 4/3) silty clay loam, dark brown (10YR 3/3) moist; 37 percent clay; moderate medium prismatic structure parting to strong fine angular blocky; hard, very firm, moderately sticky, very plastic; common very fine roots; common very fine and few fine tubular pores; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

Bw3—28 to 43 inches (71 to 109 cm); brown (10YR 5/3) silty clay loam, dark brown (10YR 3/3) moist; 35 percent clay; moderate fine angular blocky structure; very hard, extremely firm, moderately sticky, very plastic; few very fine roots; few fine and common very fine tubular pores; slightly alkaline, pH 7.5 by Hellige-Truog; gradual smooth boundary.

Bw4—43 to 60 inches (109 to 152 cm); brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; 33 percent clay; weak fine angular blocky structure; moderately hard, firm, slightly sticky, moderately plastic; few very fine roots; few very fine tubular pores; few fine round black (N 2/0 moist) iron-manganese concretions throughout; slightly alkaline, pH 7.5 by Hellige-Truog; gradual smooth boundary.

Bw5—60 to 72 inches (152 to 183 cm); brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; 29 percent clay; weak fine subangular blocky structure; moderately hard, firm, slightly sticky, moderately plastic; few very fine roots; common very fine and fine tubular pores; throughout the horizon, few fine round black (N 2/0 moist) iron-manganese concretions with sharp boundaries; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 2.5 miles east of Durham, approximately 2,800 feet east and 100 feet south of the intersection of Durham Highway and Esquon Road; T. 21 N., R. 2 E.; in an unsectionized area in the Esquon Land Grant; 39 degrees, 38 minutes, 44 seconds north latitude and 121 degrees, 45 minutes, 12 seconds west longitude; NAD27; USGS Quad: Chico, California.

Range in Characteristics

The thickness of the mollic epipedon is 20 to 35 inches (51 to 89 cm). The mean annual soil temperature is 60 to 62 degrees F (16 to 17 degrees C). The soil moisture control section is dry from July to November (120 to 125 days). The particle-size control section averages 35 to 40 percent clay. Mineralogy is mixed. Surface-initiated, reversible cracks 1/8 to 1/2 inch wide extend to a depth of 28 inches (71 cm) from about May 15 to October 15 (140 to 160 days) when the soils are not irrigated. A fluctuating water table can occur between depths of 30 (76 cm) and more than 80 inches (203 cm) from December through April. Some pedons have lime below a depth of 28 inches (71 cm).

The A horizon has dry color of 10YR 4/1, 4/2, 4/3, 5/2, or 5/3. Moist color is 10YR 3/1, 3/2, or 3/3. The content of clay ranges from 30 to 40 percent. The content of organic matter is 2 to 5 percent. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the Bw horizon has dry color of 10YR 4/3, 5/2, 5/3, 6/2, or 6/3. Moist color is 10YR 3/2, 3/3, 4/2, or 4/3. Texture is clay loam, silty clay loam, or clay. The content of clay ranges from 35 to 42 percent. The content of organic matter is 0.2 to 2 percent. Reaction is neutral or slightly alkaline.

The lower part of the Bw horizon has dry color of 10YR 5/3, 6/3, 6/4, 7/3, or 7/4. Moist color is 10YR 3/3, 4/2, 4/3, 4/4, 5/3, or 5/4 or 7.5YR 4/3 or 4/4. Texture is clay loam or loam. The content of clay ranges from 25 to 35 percent. This part of the Bw horizon has redoximorphic features, such as oxidized iron masses and iron manganese concentrations. The content of organic matter is 0.1 to 1 percent. Reaction ranges from neutral to strongly alkaline.

Butteside Series

The Butteside series consists of moderately deep, moderately well drained soils that formed in residuum and colluvium derived from volcanic rocks. These soils are on ridgetops and side slopes on Cascade foothills. Slopes range from 2 to 35 percent. The mean annual precipitation is about 27 inches (686 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Butteside gravelly loam, on a west-facing slope of 25 percent, under a cover of annual grasses and forbs, at an elevation of 265 feet (81 m). When described on 5/10/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); pale brown (10YR 6/3) gravelly loam, dark grayish brown (10YR 4/2) moist; 23 percent clay; moderate thick platy structure parting to moderate medium and coarse subangular blocky; extremely hard, firm, slightly sticky, slightly plastic; many very fine roots; few very fine and fine tubular and irregular pores; 20 percent distinct threadlike strong brown (7.5YR 5/6) oxidized iron masses in pores; 1 percent chert gravel and 14 percent volcanic gravel; slightly acid, pH 6.6 by Hellige-Truog; abrupt smooth boundary.

Bt1—2 to 8 inches (5 to 20 cm); brown (7.5YR 5/3) clay loam, brown (7.5YR 4/3) moist; 32 percent clay; moderate medium and coarse prismatic structure parting to moderate medium angular blocky; very hard, firm, moderately sticky, moderately plastic; common very fine roots; common fine and medium irregular and few very fine tubular pores; 80 percent continuous distinct clay films on faces of peds; 1 percent chert gravel and 9 percent volcanic gravel; neutral, pH 6.9 by Hellige-Truog; clear smooth boundary.

Bt2—8 to 13 inches (20 to 33 cm); brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; 38 percent clay; strong fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine roots; common very fine and fine and few medium irregular and tubular pores; 85 percent continuous distinct clay films on faces of peds; 1 percent chert gravel and 4 percent volcanic gravel; neutral, pH 6.9 by Hellige-Truog; abrupt smooth boundary.

Bt3—13 to 27 inches (33 to 69 cm); pale brown (10YR 6/3) clay, brown (10YR 4/3) moist; 50 percent clay; strong medium and coarse prismatic structure parting to strong fine, medium, and coarse angular blocky; extremely hard, firm, very sticky, very plastic; common very fine roots; many very fine to medium irregular and common very fine and fine tubular pores; 90 percent continuous distinct clay films on faces of peds; 1 percent chert gravel, 1 percent volcanic gravel, and 5 percent sandstone cobbles; neutral, pH 7.2 by Hellige-Truog; abrupt smooth boundary.

2Crtq—27 inches (69 cm); very pale brown (10YR 8/3), moderately cemented volcanic sandstone bedrock, light yellowish brown (10YR 6/4) moist; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 1.25 miles south of Durham-Pentz Road and 0.5 mile west of Clark Road, approximately 100 feet south and 1,800 feet east of the northwest corner of sec. 4, T. 20 N., R. 3 E.; 39 degrees, 37 minutes, 30 seconds north latitude and 121 degrees, 38 minutes, 44 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 60 to 68 degrees F (16 to 20 degrees C). The particle-size

control section averages 35 to 50 percent clay and 5 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. Redoximorphic features, such as masses of oxidized iron with color of 7.5YR 5/6, occur in the A horizon. Rock fragments on the surface range from 0 to 15 percent gravel, 0 to 25 percent cobbles, 0 to 10 percent stones, and 0 to 1 percent boulders.

The A horizon has dry color of 10YR 4/2, 6/2, or 6/3 or 7.5YR 5/2 or 6/3. Moist color is 10YR 4/2 or 3/2 or 7.5YR 4/2 or 3/2. Texture is gravelly loam, gravelly clay loam, or sandy clay loam. The content of clay ranges from 22 to 38 percent. The horizon has 2 to 20 percent gravel and 0 to 5 percent cobbles.

The Bt horizon has dry color of 10YR 5/2, 5/3, 6/3, 7/3, or 7/4 or 7.5YR 4/2, 5/2, or 5/3. Moist color is 10YR 4/2 or 4/3 or 7.5YR 4/2 or 4/3. Texture is gravelly clay loam, cobbly clay loam, clay loam, sandy clay loam, sandy clay, gravelly clay, very gravelly clay, or clay. The content of clay ranges from 30 to 50 percent. The horizon has 2 to 25 percent gravel and 0 to 15 percent cobbles. Reaction ranges from slightly acid to strongly alkaline.

Calcic Haploxerolls

Calcic Haploxerolls consist of moderately deep or deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on knolls on low terraces at the edge of basins. Slope ranges from 0 to 2 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Mixed, superactive, thermic Calcic Haploxerolls

Typical Pedon

Calcic Haploxerolls sandy loam, on a slope of 1 percent, in a fallow field at an elevation of 72 feet (22 m). When described on 9/22/1988, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 5 inches (0 to 13 cm); dark grayish brown (10YR 4/2) sandy loam, very dark brown (10YR 2/2) moist; 15 percent clay; moderate fine and medium granular structure; soft, very friable, nonsticky, slightly plastic; many fine and few medium roots; many very fine and common fine tubular pores; many wormcasts; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

Ak—5 to 17 inches (13 to 43 cm); grayish brown (10YR 5/2) sandy loam, very dark grayish brown (10YR 3/2) moist; 15 percent clay; moderate fine subangular blocky structure; soft, friable, slightly sticky, slightly plastic; few very fine roots; common very fine and few fine tubular pores; finely disseminated carbonates; violently effervescent; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.

Bk1—17 to 20 inches (43 to 51 cm); brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; 17 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; many very fine and common fine tubular pores; 2 percent medium spherical carbonate masses; strongly effervescent; moderately alkaline, pH 8.2 by Hellige-Truog; clear wavy boundary.

Bk2—20 to 33 inches (51 to 84 cm); pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; 15 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and fine and few medium tubular pores; 2 percent medium spherical carbonate masses; slightly effervescent; moderately alkaline, pH 8.2 by Hellige-Truog; clear wavy boundary.

C—33 to 44 inches (84 to 112 cm); pale brown (10YR 6/3) sandy loam, dark brown (10YR 3/3) moist; 14 percent clay; moderate fine and medium subangular blocky structure; very friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; moderately alkaline, pH 8.2 by Hellige-Truog; abrupt wavy boundary.
2Cd—44 to 60 inches (112 to 152 cm); densic material; massive; noncemented.

Type location: Butte County, California; about 5.7 miles southwest of Gridley, approximately 175 feet north and 150 feet west of the southeast corner of sec. 13, T. 17 N., R. 1 E.; 39 degrees, 19 minutes, 7 seconds north latitude and 121 degrees, 47 minutes, 53 seconds west longitude; NAD27; USGS Quad: Pennington, California.

Range in Characteristics

The depth to densic material ranges from 20 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from about June 15 to October 31 (about 138 days). The particle-size control section averages 10 to 18 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 2 percent to a depth of 17 inches (43 cm). A fluctuating water table can occur between the top of the densic material and 11 inches (28 cm) below the surface of the soil from December through April. Some pedons do not have a C horizon.

The A horizon has dry color of 10YR 4/2, 4/3, 5/2, or 5/3. Moist color is 10YR 2/2, 3/1, 3/2, or 3/3. Texture is sandy loam, fine sandy loam, or loam. The content of clay ranges from 15 to 23 percent. This horizon is noneffervescent to strongly effervescent. Carbonates are disseminated. Reaction ranges from neutral to strongly alkaline.

The Ak horizon has dry color of 10YR 4/2, 4/3, 5/2, or 5/3. Moist color is 10YR 3/1, 3/2, or 3/3. Texture is sandy loam or loam. The content of clay ranges from 15 to 25 percent. This horizon is slightly effervescent to violently effervescent. Carbonates are disseminated. Reaction ranges from slightly alkaline to strongly alkaline.

The Bk horizon has dry color of 10YR 5/3, 6/2, 6/3, 6/4, or 7/2. Moist color is 10YR 3/3, 4/2, 4/3, or 4/4. The content of clay ranges from 12 to 27 percent. Texture is sandy loam or loam. This horizon is slightly effervescent to violently effervescent. Carbonates are commonly disseminated and may occur as spherical carbonate masses. Reaction ranges from slightly alkaline to strongly alkaline.

The C horizon, where it occurs, has dry color of 10YR 6/2, 6/3, 7/2, or 7/3. Moist color is 10YR 3/3, 4/2, 4/6, or 5/3. Texture is sandy loam or loamy sand. The content of clay ranges from 12 to 20 percent. Reaction is moderately alkaline or strongly alkaline.

Campbellhills Series

The Campbellhills series consists of deep, somewhat poorly drained soils that formed in residuum weathered from basalt. These soils are in joint fractures on the top of basalt plateaus on volcanic Sierra Nevada foothills. Slopes range from 2 to 15 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Ultic Argixerolls

Typical Pedon

Campbellhills gravelly loam, on a west-facing slope of 2 percent, under a cover of annual grasses, at an elevation of 380 feet (116 m). When described on 4/28/1997, the soil was dry to a depth of 39 inches (99 cm) and moist from 39 to 50 inches (99 to 127 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (10YR 5/3) gravelly loam, dark brown (7.5YR 3/2) moist; 15 percent clay; moderate thick platy structure parting to weak very fine subangular blocky; slightly hard, very friable, nonsticky, slightly plastic; many very fine roots; many very fine irregular pores; 25 percent strong brown (7.5YR 4/6 moist) oxidized iron masses; 10 percent basalt cobbles and 15 percent basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt1—2 to 7 inches (5 to 18 cm); brown (10YR 5/3) gravelly loam, dark brown (7.5YR 3/2) moist; 18 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots; common very fine tubular pores; 20 percent clay films on faces of peds and in pores; 25 percent basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt wavy boundary.

Bt2—7 to 17 inches (18 to 43 cm); brown (10YR 4/3) very gravelly clay loam, dark brown (7.5YR 3/2) moist; 30 percent clay; moderate fine subangular blocky structure; hard, firm, moderately sticky, slightly plastic; common very fine roots; many very fine tubular pores; 30 percent clay films on faces of peds and in pores; 40 percent basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt3—17 to 29 inches (43 to 74 cm); brown (10YR 4/3) very gravelly clay loam, brown (7.5YR 4/2) moist; 33 percent clay; moderate fine subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine roots; many very fine tubular pores; 40 percent clay films on faces of peds and in pores; 5 percent basalt cobbles and 50 percent basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt4—29 to 39 inches (74 to 99 cm); brown (7.5YR 4/3) extremely gravelly clay loam, dark brown (7.5YR 3/2) moist; 36 percent clay; moderate fine subangular blocky structure; hard, very firm, moderately sticky, moderately plastic; few very fine roots; common very fine tubular pores; 50 percent clay films on faces of peds and in pores; 10 percent basalt cobbles and 55 percent basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt5—39 to 50 inches (99 to 127 cm); brown (10YR 5/3) extremely gravelly clay loam, brown (7.5YR 4/2) moist; 38 percent clay; moderate fine subangular blocky structure; hard, very firm, moderately sticky, moderately plastic; few very fine roots; common very fine tubular pores; 60 percent clay films on faces of peds and in pores; 20 percent basalt cobbles; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

R—50 inches (127 cm); lithic basalt with weathering rind.

Type location: Butte County, California; about 3.1 miles northwest of Oroville, approximately 1,650 feet east and 550 feet south of the northwest corner of sec. 10, T. 19 N., R. 3 E.; 39 degrees, 31 minutes, 20.9 seconds north latitude and 121 degrees, 37 minutes, 37.9 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from May to about November (about 150 to 200 days). The particle-size control section averages 20 to 30 percent clay and 40 to 55 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. By sum of cations, base saturation ranges from 35 to 40 percent. By ammonium acetate, it is 76 to 91 percent. A fluctuating water table can occur between the top of the bedrock and 3 inches (8 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 10 to 25 percent gravel and 0 to 30 percent cobbles.

The A horizon has dry color of 7.5YR 3/3, 4/4, or 6/4 or 10YR 3/3, 4/3, or 4/4. Moist color is 7.5YR 2/2, 3/2, 3/3, or 4/3 or 10YR 2/2 or 3/2. Texture is loam, gravelly loam,

or cobbly loam. The content of clay ranges from 15 to 22 percent. The horizon has 10 to 20 percent gravel and 0 to 15 percent cobbles. The content of organic matter is 4 to 8 percent. Reaction is moderately acid or slightly acid.

The Bt1 horizon has dry color of 7.5YR 3/3, 3/4, 4/4, or 4/6 or 10YR 3/3, 4/3, or 4/4. Moist color is 7.5YR 2/2, 3/2, 3/3, or 4/3 or 10YR 2/2, 3/2, or 3/3. Texture is cobbly loam, gravelly loam, very gravelly loam, or very cobbly loam. The content of clay ranges from 18 to 27 percent. The horizon has 10 to 30 percent gravel and 0 to 40 cobbles. The content of organic matter is 3 to 6 percent. Reaction is moderately acid or slightly acid.

The Bt2, Bt3, Bt4 and Bt5 horizons have dry colors of 7.5YR 3/4 or 4/3 or 10YR 3/4 or 4/4. Moist color is 7.5YR 3/2 or 3/3 or 10YR 3/2, 3/3, or 3/4. Texture is very gravelly clay loam, very cobbly clay loam, very gravelly loam, very cobbly loam, extremely cobbly loam, extremely cobbly clay loam, or extremely gravelly clay loam. The content of clay ranges from 25 to 40 percent. The content of gravel is 10 to 65 percent, and the content of cobbles is 0 to 50 percent. The content of organic matter is 0.3 to 2 percent. Reaction ranges from moderately acid to neutral.

Carhart Series

The Carhart series consists of moderately deep, poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are in basins and drainageways, on toeslopes and footslopes, and in saddles on Cascade foothills. Slopes range from 0 to 12 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Endoaquerts

Typical Pedon

Carhart clay, on a north-facing slope of 3 percent, under a cover of ryegrass, medusahead, lupine, and clover, at an elevation of 282 feet (86 m). When described on 4/24/2001, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 6 cm); gray (7.5YR 5/1) clay, dark gray (7.5YR 4/1) moist; 55 percent clay; strong medium and coarse subangular blocky structure; very rigid, friable, very sticky, very plastic; many very fine roots; many very fine to medium irregular and common very fine and fine tubular pores; neutral, pH 6.8 by Hellige-Truog; gradual smooth boundary.

Bssg1—2 to 12 inches (6 to 30 cm); gray (7.5YR 5/1) clay, dark gray (7.5YR 4/1) moist; 55 percent clay; moderate coarse prismatic structure parting to strong medium and coarse angular blocky; very rigid, friable, very sticky, very plastic; common very fine and fine roots; common very fine and fine irregular and tubular and common medium irregular pores; 20 percent slickensides; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bssg2—12 to 24 inches (30 to 61 cm); gray (7.5YR 5/1) clay, dark gray (7.5YR 4/1) moist; 55 percent clay; strong fine and medium angular blocky structure; very rigid, friable, very sticky, very plastic; common very fine roots; common very fine and fine irregular and tubular pores; 50 percent slickensides; slightly alkaline, pH 7.5 by Hellige-Truog; gradual smooth boundary.

Bssg3—24 to 30 inches (61 to 76 cm); gray (7.5YR 5/1) clay, dark gray (7.5YR 4/1) moist; 55 percent clay; strong fine and medium subangular blocky structure; very rigid, friable, very sticky, very plastic; few very fine roots; few very fine and fine tubular pores; 15 percent slickensides; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.

2Crtk—30 inches (76 cm); moderately cemented volcanic sandstone bedrock; 15 percent clay films; 15 percent carbonate masses in cracks; slight effervescence, by HCl, 1 normal; moderately alkaline, pH 8.5 by Hellige-Truog.

Type location: Butte County, California; about 1.1 miles south of the intersection of Durham-Pentz Road and Clark Road, approximately 2,350 feet north and 800 feet east of the southwest corner of sec. 34, T. 21 N., R. 3 E.; 39 degrees, 37 minutes, 55 seconds north latitude and 121 degrees, 38 minutes, 1 second west longitude; NAD83; USGS Quad: Hamlin Canyon, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 60 to 68 degrees F (16 to 20 degrees C). The particle-size control section averages 40 to 59 percent clay and 0 to 10 percent rock fragments, mostly gravel. Mineralogy is smectitic. Reversible, surface-initiated cracks 1 to 2 inches (3 to 5 cm) wide extend to a depth of 20 inches (51 cm) for 200 to 250 days when the soils are not irrigated. A fluctuating water table can occur between the top of the bedrock and the surface of the soil from December through May. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 5 percent cobbles. Some pedons have Bss and Crq horizons or a gravelly substratum.

The A horizon has dry color of 7.5YR 5/1, 5/2, 6/2, or 6/3 or 10YR 4/1, 5/1, or 6/1. Moist color is 7.5YR 4/1, 4/2, or 3/2; 10YR 3/2 or 4/1; or 5YR 4/1. Texture is clay. The content of clay ranges from 40 to 59 percent. The content of gravel is 0 to 10 percent. Redoximorphic features occur as oxidized iron masses and iron-manganese masses. Reaction is neutral or slightly alkaline.

The Bssg horizon has dry color of 7.5YR 4/1, 4/2, 5/1, 5/2, or 5/3 or 10YR 5/2 or 6/1. Moist color is 7.5YR 4/1 or 4/2 or 10YR 4/1 or 5/1. Texture is clay. The content of clay ranges from 40 to 59 percent. The content of gravel is 0 to 10 percent. Redoximorphic features occur as iron-manganese nodules and a gleyed matrix. Reaction ranges from neutral to strongly alkaline.

Carhart Taxadjunct

The Carhart taxadjunct consists of shallow or moderately deep, poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are in basins on strath terraces on Cascade foothills. Slopes range from 0 to 2 percent. The mean annual precipitation is about 27 inches (686 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Clayey, smectitic, thermic, shallow Xeric Endoaquerts

Typical Pedon

Carhart taxadjunct, on a southwest-facing slope of 1 percent, under a cover of soft chess, annual ryegrass, and Mediterranean barley, at an elevation of 515 feet (157 m). When described on 5/12/1998, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 4 inches (0 to 10 cm), dark gray (7.5YR 4/1) clay, brown (7.5YR 4/2) moist; 55 percent clay; strong fine and medium granular structure; very hard, firm, very sticky, very plastic; common fine and many very fine roots; many very fine and fine irregular and tubular pores; 10 percent cobbles; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.

Bss1—4 to 11 inches (10 to 28 cm); dark gray (7.5YR 4/1) gravelly clay, brown (7.5YR 4/2) moist; 50 percent clay; moderate medium subangular blocky structure; very hard, firm, very sticky, very plastic; few fine and common very fine

roots; common very fine and fine tubular and irregular pores; 10 percent slickensides; 5 percent cobbles and 10 percent gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

Bss2—11 to 17 inches (28 to 43 cm); dark gray (7.5YR 4/1) clay, brown (7.5YR 4/2) moist; 45 percent clay; moderate medium subangular blocky structure; very hard, firm, very sticky, very plastic; few fine and common very fine roots; common very fine and fine tubular and irregular pores; 10 percent slickensides; 2 percent gravel and 5 percent cobbles; neutral, pH 6.9 by Hellige-Truog; abrupt smooth boundary.

2R—17 inches (43 cm); indurated mudflow breccia bedrock.

Type location: Butte County, California; about 1.65 miles northeast of the intersection of Keefer Road and Cohasset Highway, approximately 590 feet south and 500 feet west of the northeast corner of sec. 14, T. 23 N., R. 1 E.; 39 degrees, 51 minutes, 14 seconds north latitude and 121 degrees, 49 minutes, 35 seconds west longitude; NAD27; USGS Quad: Richardson Springs, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 40 inches (25 to 102 cm). The mean annual soil temperature is 60 to 68 degrees F (16 to 20 degrees C). The soil moisture control section is dry in all parts from about June to November (about 150 days). The particle-size control section averages 40 to 60 percent clay and 5 to 35 percent rock fragments, mostly cobbles. Mineralogy is smectitic. Surface-initiated, reversible cracks 1 to 2 inches (2.5 to 5 cm) wide extend to a depth of 10 to 24 inches (25 to 61 cm) from about May to November for 150 to 180 days when the soils are not irrigated. A fluctuating water table can occur between the top of the bedrock and the surface of the soil from November through May. Rock fragments on the surface range from 0 to 10 percent gravel, 5 to 30 percent cobbles, 0 to 20 stones, and 0 to 3 percent boulders.

The A horizon has dry color of 7.5YR 4/1 or 3/2 or 10YR 4/1 or 3/2. Moist color is 7.5YR 4/2 or 3/2 or 10YR 4/2 or 3/2. Texture is clay, gravelly clay, cobbly clay, or very cobbly clay. The content of clay ranges from 50 to 60 percent. The horizon has 0 to 10 percent gravel, 5 to 35 percent cobbles, and 0 to 5 percent stones. Redoximorphic features occur as iron and iron-manganese masses. Reaction is slightly acid or neutral.

The Bss horizon has dry color of 7.5YR 4/1 or 3/1 or 10YR 4/1. Moist color is 7.5YR 3/2, 4/2, or 4/3 or 10YR 3/2 or 4/2. Texture is clay, gravelly clay, cobbly clay, very cobbly clay, or extremely cobbly clay. The content of clay ranges from 40 to 60 percent. The horizon has 2 to 15 percent gravel, 5 to 60 percent cobbles, and 0 to 10 percent stones. Redoximorphic features occur as iron-manganese nodules and a manganese capping on the bedrock. Reaction is neutral.

The Carhart taxadjunct is a taxadjunct because it is underlain by lithic bedrock instead of paralithic bedrock and is shallow or moderately deep. These differences do not significantly affect the use, management, or interpretations of the soils.

Cerpone Series

The Cerpone series consists of deep, well drained soils that formed in residuum and colluvium derived from serpentinized rocks. These soils are on ridgetops and side slopes on ultramafic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 60 inches (1,524 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, parasesquic, mesic Ultic Haploxeralfs

Typical Pedon

Cerpone gravelly loam, on a northeast-facing slope of 11 percent, under a cover of ponderosa pine, incense cedar, Douglas-fir, and whiteleaf manzanita, at an elevation

of 3,140 feet (957 m). When described on 9/25/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); needles and twigs.
Oe—1 to 2 inches (3 to 4 cm); partially decomposed needles and twigs.
A—2 to 4 inches (4 to 9 cm); light brown (7.5YR 6/4) gravelly loam, dark brown (7.5YR 3/4) moist; 18 percent clay; strong fine and medium granular structure; slightly hard, friable, nonsticky, slightly plastic; many very fine and fine roots throughout; many very fine to medium irregular and tubular pores; noneffervescent; 20 percent gravel; moderately acid, pH 5.9 by pH meter 1:1 water; clear smooth boundary.
Bt1—4 to 9 inches (9 to 24 cm); reddish brown (5YR 5/4) gravelly loam, dark reddish brown (5YR 3/4) moist; 22 percent clay; moderate fine and medium subangular blocky structure; soft, friable, slightly sticky, slightly plastic; common very fine to medium and few coarse roots; many very fine to medium irregular and tubular pores; few faint discontinuous clay films in root channels and pores; noneffervescent; 20 percent gravel and 10 percent cobbles; moderately acid, pH 6.0 by pH meter 1:1 water; clear smooth boundary.
Bt2—9 to 17 inches (24 to 42 cm); yellowish red (5YR 5/6) cobbly loam, dark reddish brown (5YR 3/4) moist; 26 percent clay; moderate fine and medium subangular blocky structure; soft, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine and fine and few medium irregular and tubular pores; few faint discontinuous clay films in root channels and pores; noneffervescent; 10 percent gravel and 20 percent cobbles; slightly acid, pH 6.2 by pH meter 1:1 water; gradual smooth boundary.
Bt3—17 to 26 inches (42 to 67 cm); strong brown (7.5YR 5/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 31 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium irregular and tubular pores; common distinct discontinuous clay films in root channels and pores; noneffervescent; 15 percent gravel; slightly acid, pH 6.3 by pH meter 1:1 water; clear smooth boundary.
Bt4—26 to 41 inches (67 to 103 cm); strong brown (7.5YR 5/6) very gravelly silty clay loam, strong brown (7.5YR 5/8) moist; 34 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium irregular and tubular pores; common distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 40 percent gravel; neutral, pH 6.6 by pH meter 1:1 water; clear smooth boundary.
Bt5—41 to 57 inches (103 to 144 cm); yellowish brown (10YR 5/6) very gravelly silty clay loam, dark yellowish brown (10YR 4/6) moist; 29 percent clay; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine to medium roots; many very fine and fine irregular and tubular pores; few distinct discontinuous clay films in root channels and pores; noneffervescent; 55 percent gravel; neutral, pH 6.7 by pH meter 1:1 water; abrupt smooth boundary.
R—57 inches (144 cm); very strongly cemented ultramafic bedrock.

Type location: Butte County, California; about 1.2 miles northeast of Sawmill Peak, approximately 2,150 feet south and 250 feet east of the northwest corner of sec. 28, T. 23 N., R. 4 E.; 39 degrees, 49 minutes, 23.54 seconds north latitude and 121 degrees, 32 minutes, 29.94 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (51 to 102 cm). The mean annual soil temperature is 55 to 58 degrees F (13 to 14 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 25 to 35 percent clay and 15 to 35 percent rock fragments, mostly gravel. Mineralogy is parasesquic. Rock fragments on the surface range from 10 to 30 percent gravel, 0 to 20 percent cobbles, and 0 to 10 percent stones. The subsurface horizons have more than 40 percent silt. Magnesium extractable bases in the majority of the control section equal or exceed calcium extractable bases.

The A horizon has dry color of 7.5YR 6/3, 6/4, or 6/6 or 5YR 5/4, 6/4, or 6/6. Moist color is 7.5YR 3/4 or 4/3 or 5YR 4/3 or 6/4. Texture is gravelly or very gravelly loam. The content of clay ranges from 16 to 22 percent. The horizon has 15 to 35 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. Reaction is moderately acid or slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 6/4, 6/6, or 5/8 or 5YR 5/4 or 5/6. Moist color is 7.5YR 4/4 or 5YR 3/4 or 4/4. Texture is gravelly or cobbly loam. The content of clay ranges from 20 to 27 percent. The content of gravel is 10 to 30 percent, and the content of cobbles is 0 to 20 percent. Reaction is moderately acid or slightly acid.

The lower part of the Bt horizon has dry color of 7.5YR 5/6, 6/4, 6/6, or 7/6; 5YR 6/4, 5/6, or 6/6; or 10YR 5/6. Moist color is 7.5YR 5/8; 5YR 4/4, 4/6, or 5/6; or 10YR 4/6. Texture is gravelly clay loam, very gravelly silty clay loam, very gravelly loam, or very gravelly clay loam. The content of clay ranges from 25 to 35 percent. The content of gravel is 15 to 60 percent, the content of cobbles is 0 to 15 percent, and the content of stones is 0 to 5 percent. Reaction is slightly acid or neutral.

Charger Series

The Charger series consists of very deep, moderately well drained soils that formed in overbank alluvium over channel alluvium derived from dominantly volcanic rocks. These soils are on proximal alluvial fans. Slopes range from 0 to 2 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Coarse-loamy, mixed, superactive, thermic Typic Haploxerolls

Typical Pedon

Charger fine sandy loam, on a west-facing slope of less than 1 percent, under a cover of plantain, mouse barley, and valley oak seedlings, at an elevation of 227 feet (69 m). When described on 6/11/1997, the soil was dry from 0 to 42 inches (0 to 107 cm), slightly moist from 42 to 63 inches (107 to 160 cm), and moist below 63 inches (160 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 3 inches (0 to 8 cm); brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; 14 percent clay; moderate medium platy structure parting to moderate fine and medium granular; slightly hard, friable, nonsticky, nonplastic; many very fine and common fine roots; many very fine and fine vesicular and tubular pores; 10 percent gravel; noneffervescent; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

A1—3 to 7 inches (8 to 18 cm); brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; 15 percent clay; weak medium subangular blocky structure; extremely hard, slightly rigid, nonsticky, nonplastic; common very fine and fine roots; common very fine and fine tubular pores; 7 percent gravel; noneffervescent; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

A2—7 to 15 inches (18 to 38 cm); brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; 16 percent clay; weak medium subangular blocky structure; hard, very firm, nonsticky, nonplastic; common very fine and fine roots; many very fine and fine and few medium and coarse tubular pores; 2 percent gravel; noneffervescent; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bw1—15 to 32 inches (38 to 81 cm); light yellowish brown (10YR 6/4) sandy loam, dark brown (10YR 3/3) moist; 16 percent clay; weak medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common very fine and fine roots; common very fine and fine and few medium and coarse tubular pores; 2 percent gravel; noneffervescent; slightly alkaline, pH 7.8 by Hellige-Truog; gradual smooth boundary.

Bw2—32 to 42 inches (81 to 107 cm); light yellowish brown (10YR 6/4) sandy loam, brown (10YR 4/3) moist; 13 percent clay; weak medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common very fine and fine roots; many very fine and fine and common medium and coarse tubular pores; 3 percent gravel; noneffervescent; moderately alkaline, pH 8.0 by Hellige-Truog; gradual smooth boundary.

Bw3—42 to 53 inches (107 to 135 cm); very pale brown (10YR 7/4) sandy loam, brown (10YR 4/3) moist; 13 percent clay; weak medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots; many very fine and fine and few medium tubular pores; 3 percent gravel; noneffervescent; moderately alkaline, pH 8.0 by Hellige-Truog; gradual smooth boundary.

Bw4—53 to 63 inches (135 to 160 cm); light yellowish brown (10YR 6/4) sandy loam, brown (10YR 4/3) moist; 12 percent clay; weak medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; few very fine and fine roots; many very fine and fine and few medium tubular pores; common fine and medium irregular dark brown (7.5YR 3/4 moist) oxidized iron masses throughout and few fine irregular black (N 2/0 moist) iron-manganese masses between peds; 2 percent gravel; noneffervescent; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

C—63 to 80 inches (160 to 203 cm); very pale brown (10YR 7/3) extremely gravelly loamy coarse sand, brown (10YR 4/3) moist; 3 percent clay; single grain; loose, nonsticky, nonplastic; common very fine roots; many very fine to medium interstitial and tubular pores; 50 percent gravel and 15 percent cobbles; noneffervescent; moderately alkaline, pH 8.0 by Hellige-Truog.

Type location: Butte County, California; about 0.5 mile northwest of the Durham Mutual Diversion Dam, approximately 1,650 feet south and 1,450 feet east of the northwest corner of sec. 5, T. 21 N., R. 2 E.; 39 degrees, 42 minutes, 26.5 seconds north latitude and 121 degrees, 46 minutes, 51.8 seconds west longitude; NAD83; USGS Quad: Chico, California.

Range in Characteristics

Depth to the substratum is 40 to 80 inches (102 to 203 cm). The mean annual soil temperature is 61 to 62 degrees F (16 to 17 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 180 days). The particle-size control section averages 5 to 17 percent clay and 0 to 25 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur at a depth of 40 to 80 inches (102 to 203 cm) from December through April. Redoximorphic features, such as oxidized iron masses and iron-manganese masses with color of 7.5YR 3/4 and N 2/0 moist, occur in the lower part of the Bw horizon. Rock fragments on the surface range from 0 to 15 percent gravel. In some pedons the C horizon has silica pendants under rock fragments.

The Ap horizon has dry color of 10YR 5/3 or 5/4. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/2 or 3/3. Texture is fine sandy loam. The content of clay ranges from 8 to 17 percent. The content of gravel is 0 to 15 percent. Reaction ranges from moderately acid to neutral.

The A horizon has dry color of 10YR 5/3 or 5/4. Moist color is 10YR 3/3 or 7.5YR 3/2. Texture is fine sandy loam or sandy loam. The content of clay ranges from 8 to 17 percent. The content of gravel is 0 to 15 percent. Reaction ranges from slightly acid to moderately alkaline.

The Bw horizon has dry color of 10YR 5/3, 6/4, or 7/4 or 7.5YR 5/4 or 6/4. Moist color is 10YR 3/3 or 4/3 or 7.5YR 3/3, 4/2, or 4/3. Texture is fine sandy loam, sandy loam, gravelly sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 8 to 17 percent. The horizon has 0 to 35 percent gravel and 0 to 5 percent cobbles. Reaction ranges from neutral to moderately alkaline.

The C horizon has dry color of 10YR 5/4, 6/3, or 7/3 or 7.5YR 5/4 or 6/3. Moist color is 10YR 3/3 or 4/3 or 7.5YR 4/3. Texture is gravelly sandy loam, very gravelly sandy loam, very gravelly coarse sandy loam, very gravelly coarse sand, extremely gravelly loamy coarse sand, extremely gravelly fine sand, or extremely cobbly sandy loam. The content of clay ranges from 1 to 10 percent. The horizon has 20 to 70 percent gravel, 5 to 35 percent cobbles, and 0 to 15 percent stones. Reaction ranges from neutral to moderately alkaline.

Chawanakee Series

The Chawanakee series consists of shallow, somewhat excessively drained soils that formed in residuum and colluvium derived from intrusive igneous rocks, mainly trondhjemite and quartz diorite. These soils are on ridgetops and side slopes on granitic Sierra Nevada mountains. Slopes range from 2 to 110 percent. The mean annual precipitation is about 72 inches (1,829 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Loamy, mixed, active, mesic shallow Typic Dystroxerepts

Typical Pedon

Chawanakee gravelly sandy loam, on an east-southeast-facing slope of 45 percent, under a cover of greenleaf manzanita, tanoak, ponderosa pine, canyon live oak, and sugar pine, at an elevation of 4,080 feet (1,244 m). When described on 7/5/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

Oe—1 to 2 inches (3 to 5 cm); moderately decomposed plant material; clear smooth boundary.

A—2 to 5 inches (5 to 13 cm); white (2.5Y 8/1) gravelly sandy loam, grayish brown (2.5Y 5/2) moist; 4 percent clay; single grain; loose, nonsticky, nonplastic; many very fine and fine roots; many very fine and fine and common medium interstitial and tubular pores; 20 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; clear smooth boundary.

Bw1—5 to 11 inches (13 to 28 cm); very pale brown (10YR 8/3) gravelly sandy loam, pale brown (10YR 6/3) moist; 5 percent clay; weak fine and medium subangular blocky structure parting to single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine and fine and common medium irregular and tubular pores; 20 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; gradual smooth boundary.

Bw2—11 to 19 inches (28 to 48 cm); very pale brown (10YR 8/2) gravelly sandy loam, pale brown (10YR 6/3) moist; 4 percent clay; weak fine and medium

subangular blocky structure parting to single grain; loose, nonsticky, nonplastic; common very fine to coarse roots; many very fine and fine and common medium irregular and tubular pores; 30 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.

Cr—19 inches (48 cm); extremely weakly cemented quartz diorite bedrock; strongly acid, pH 5.5 by Hellige-Truog.

Type location: Butte County, California; about 1.25 miles northeast of Ragdump, approximately 1,800 feet south and 2,100 feet west of the northeast corner of sec. 7, T. 23 N., R. 5 E.; 39 degrees, 51 minutes, 58 seconds north latitude and 121 degrees, 27 minutes, 22 seconds west longitude; NAD83; USGS Quad: Pulga, California.

Range in Characteristics

The depth to paralithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 47 to 59 degrees F (8 to 15 degrees C). The soil moisture control section is dry in all parts from about mid-June to mid-October (about 120 days). The particle-size control section averages 2 to 6 percent clay and 10 to 35 percent gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 10 percent gravel and 0 to 5 percent boulders.

The A horizon has dry color of 10YR 5/1, 5/2, 6/1, 6/2, 6/3, or 7/1 or 2.5Y 8/1. Moist color is 10YR 3/2, 4/1, 4/2, 4/3, or 5/2 or 2.5Y 8/1. Texture is sandy loam, gravelly sandy loam, gravelly coarse sandy loam, or gravelly loamy coarse sand. The content of clay ranges from 2 to 6 percent. The content of gravel is 10 to 30 percent. Reaction is slightly acid or moderately acid.

The Bw horizon has dry color of 10YR 6/3, 7/2, 7/3, 8/2, or 8/3. Moist color is 10YR 4/2, 4/3, 5/3, or 6/3. Texture is gravelly sandy loam, very gravelly sandy loam, gravelly coarse sandy loam, loamy sand, gravelly loamy sand, gravelly loamy coarse sand, or sandy loam. The content of clay ranges from 2 to 6 percent. The content of gravel is 10 to 35 percent. Reaction ranges from slightly acid to strongly acid.

Cherokeespring Series

The Cherokeespring series consists of very deep, well drained soils that formed in alluvium derived from basalt. These soils are on benches on side slopes on basalt plateaus on Sierra Nevada foothills. Slopes range from 2 to 15 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Ultic Palexeralfs

Typical Pedon

Cherokeespring gravelly silt loam, on a north-facing slope of 12 percent, under a cover of hardwoods, shrubs, and annual grasses, at an elevation of 645 feet (196 m). When described on 6/28/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (7.5YR 4/3) gravelly silt loam, dark brown (7.5YR 3/3) moist; 18 percent clay; moderate fine and medium granular structure; slightly hard, friable, slightly sticky, nonplastic; many fine and medium roots; many fine irregular pores; 15 percent basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt1—3 to 7 inches (8 to 18 cm); brown (7.5YR 4/4) gravelly silt loam, dark brown (7.5YR 3/4) moist; 24 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; many fine and medium roots; many fine irregular pores; 40 percent discontinuous prominent clay

films on faces of peds; 15 percent basalt gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt smooth boundary.

Bt2—7 to 16 inches (18 to 41 cm); brown (7.5YR 4/4) gravelly silty clay loam, dark brown (7.5YR 3/4) moist; 28 percent clay; moderate coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common fine and medium roots; common fine and medium tubular pores; 50 percent continuous prominent clay films on faces of peds; 20 percent basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

Bt3—16 to 30 inches (41 to 76 cm); reddish brown (5YR 4/4) gravelly silty clay loam, dark reddish brown (5YR 3/4) moist; 32 percent clay; moderate coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine and fine roots; common fine tubular pores; 60 percent continuous prominent clay films on faces of peds; 25 percent basalt gravel; moderately acid, pH 5.8 by Hellige-Truog; clear smooth boundary.

Bt4—30 to 42 inches (76 to 107 cm); reddish brown (5YR 4/3) gravelly silty clay loam, dark reddish brown (5YR 3/4) moist; 35 percent clay; moderate coarse prismatic structure; very hard, firm, very sticky, moderately plastic; common very fine and fine roots; common fine tubular pores; 65 percent continuous prominent clay films on faces of peds; 30 percent basalt gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.

Bt5—42 to 60 inches (107 to 152 cm); reddish brown (5YR 4/3) very gravelly silty clay, dark reddish brown (5YR 3/4) moist; 40 percent clay; moderate coarse prismatic structure parting to moderate medium angular blocky; hard, firm, very sticky, very plastic; few very fine, fine, and coarse roots between peds; few fine tubular pores; 90 percent continuous prominent clay films on faces of peds; 35 percent basalt gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bt6—60 to 68 inches (152 to 173 cm); reddish brown (5YR 4/3) very gravelly silty clay, dark reddish brown (5YR 3/4) moist; 42 percent clay; moderate coarse prismatic structure parting to moderate medium angular blocky; hard, firm, very sticky, very plastic; few very fine roots between peds; few very fine tubular pores; 80 percent continuous prominent clay films on faces of peds; 15 percent basalt cobbles and 30 percent basalt gravel; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 5.9 miles northwest of Oroville, approximately 300 feet east and 500 feet south of the northwest corner of sec. 13, T. 20 N., R. 3 E.; 39 degrees, 35 minutes, 45 seconds north latitude and 121 degrees, 35 minutes, 43 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 27 to 35 percent clay, less than 15 percent sand, more than 50 percent silt, and 15 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 10 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 7.5YR 3/4 or 4/3 or 10YR 3/4 or 4/4. Moist color is 7.5YR 2/2, 3/2, 3/3, or 3/4 or 10YR 2/2 or 3/3. Texture is gravelly silt loam or silt loam. The content of clay ranges from 15 to 20 percent. The horizon has 5 to 15 percent gravel and 0 to 5 percent cobbles. Reaction is slightly acid.

The upper part of the Bt horizon has dry color of 5YR 4/4; 7.5YR 3/4, 4/3, or 4/4; or 10YR 3/4. Moist color is 5YR 3/4; 7.5YR 3/2, 3/3, or 3/4; or 10YR 3/2. Texture is gravelly silt loam, silt loam, gravelly silty clay loam, silty clay loam, or cobbly silt loam. The content of clay ranges from 20 to 30 percent. The content of gravel is 10 to 25 percent, and the content of cobbles is 0 to 30 percent. Reaction ranges from moderately acid to neutral.

The middle part of the Bt horizon has dry color of 5YR 4/4, 7.5YR 3/4 or 4/4, or 10YR 3/4. Moist color is 5YR 3/3, 7.5YR 3/3 or 3/4, or 10YR 3/3. Texture is gravelly silty clay loam, very gravelly silty clay loam, very cobbly silt clay loam, or silty clay loam. The content of clay ranges from 28 to 35 percent. The content of gravel is 10 to 30 percent, and the content of cobbles is 0 to 30 percent. Reaction ranges from slightly acid to strongly acid.

The lower part of the Bt horizon has dry color of 5YR 4/3 or 4/4 or 7.5YR 4/4. Moist color is 5YR 3/4 or 7.5YR 3/4. Texture is very gravelly silty clay, very gravelly silty clay loam, very cobbly silty clay loam, or cobbly silty clay loam. The content of clay ranges from 35 to 42 percent. The content of gravel is 10 to 40 percent, and the content of cobbles is 0 to 40 percent. Reaction ranges from strongly acid to neutral.

Cherotable Series

The Cherotable series consists of deep, moderately well drained soils that formed in alluvium and residuum weathered from basalt. These soils are on the top of basalt plateaus on volcanic Sierra Nevada foothills. Slopes range from 2 to 15 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 59 degrees F (15 degrees C).

Taxonomic class: Fine-loamy, parasesquic, thermic Ultic Haploxeralfs

Typical Pedon

Cherotable loam, on a south-facing slope of 5 percent, under a cover of annual grasses, at an elevation of 1,350 feet (411 m). When described on 10/19/2000, the soil was moist from 0 to 21 inches (0 to 53 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/3) loam, brown (7.5YR 4/3) moist; 21 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, nonplastic; many fine and medium roots; many fine and medium irregular pores; 5 percent basalt gravel; very strongly acid, pH 4.8 by pH meter 1:1 water; clear smooth boundary.

Bt1—2 to 8 inches (5 to 20 cm); brown (7.5YR 5/3) loam, brown (7.5YR 4/3) moist; 26 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many fine and medium roots; many fine and medium irregular pores; 15 percent discontinuous faint clay films on surfaces along pores; 10 percent basalt gravel; strongly acid, pH 5.5 by pH meter 1:1 water; clear smooth boundary.

Bt2—8 to 14 inches (20 to 36 cm); brown (7.5YR 5/3) clay loam, brown (7.5YR 4/3) moist; 30 percent clay; moderate coarse subangular blocky structure parting to moderate medium subangular blocky; slightly hard, friable, moderately sticky, slightly plastic; common fine and few very fine roots; common fine tubular and common medium irregular pores; 20 percent discontinuous distinct clay films on surfaces along pores; 10 percent basalt gravel; strongly acid, pH 5.4 by pH meter 1:1 water; gradual smooth boundary.

Bt3—14 to 21 inches (36 to 53 cm); brown (7.5YR 5/3) gravelly clay loam, brown (7.5YR 4/3) moist; 30 percent clay; moderate medium subangular blocky structure parting to moderate coarse subangular blocky; slightly hard, friable, moderately sticky, moderately plastic; few fine and common medium roots; common fine tubular pores; 40 percent discontinuous distinct clay films on faces of peds; 5 percent basalt cobbles and 10 percent basalt gravel; strongly acid, pH 5.5 by pH meter 1:1 water; gradual smooth boundary.

Bt4—21 to 30 inches (53 to 76 cm); brown (7.5YR 5/3) cobbly clay loam, brown (7.5YR 4/3) moist; 31 percent clay; moderate coarse subangular blocky structure

parting to moderate medium subangular blocky; hard, friable, moderately sticky, moderately plastic; few fine roots; few fine tubular pores; 40 percent discontinuous distinct clay films on faces of peds; 10 percent basalt gravel and 10 percent basalt cobbles; strongly acid, pH 5.5 by pH meter 1:1 water; gradual wavy boundary.

Bt5—30 to 45 inches (76 to 114 cm); brown (7.5YR 5/3) very cobbly clay, brown (7.5YR 4/3) moist; 48 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine tubular pores; 45 percent discontinuous distinct clay films on faces of peds; 20 percent basalt gravel and 30 percent basalt cobbles; moderately acid, pH 5.7 by pH meter 1:1 water; abrupt wavy boundary.

R—45 inches (114 cm); indurated basalt bedrock.

Type location: Butte County, California; about 5 miles north of Oroville, approximately 660 feet west and 140 feet north of the southeast corner of sec. 8, T. 20 N., R. 4 E.; 39 degrees, 35 minutes, 54.7 seconds north latitude and 121 degrees, 32 minutes, 29.4 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about May to the end of October (about 150 to 200 days). The particle-size control section averages 27 to 35 percent clay and 10 to 25 percent rock fragments, mostly gravel. Mineralogy is parasesquic. The content of organic matter is 2 to 11 percent to a depth of 2 inches (5 cm) and 1 to 3 percent from a depth of 2 to 45 inches (5 to 114 cm). By ammonium acetate, base saturation ranges from 59 to 73 percent to a depth of 8 inches (20 cm) and is more than 50 percent from a depth of 8 to 45 inches (20 to 114 cm). By sum of cations, base saturation is 38 to 47 percent to a depth of 8 inches (20 cm) and 34 to 36 percent from a depth of 8 to 45 inches (114 cm). A fluctuating water table can occur between the top of the bedrock and 20 inches (51 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 0 to 15 percent gravel. Some pedons have a BCt horizon.

The A horizon has dry color of 7.5YR 3/3 or 4/4 or 10YR 3/4, 4/3, 5/2, or 5/3. Moist color is 7.5YR 2/2, 3/2, 3/3, 4/2, or 4/3 or 10YR 2/2 or 3/2. Texture is loam or gravelly loam. The content of clay ranges from 18 to 24 percent. The horizon has 0 to 20 percent gravel and 0 to 10 percent cobbles. Reaction ranges from very strongly acid to slightly acid.

The Bt1, Bt2, Bt3, and Bt4 horizons have dry color of 5YR 3/4 or 4/4; 7.5YR 3/4, 4/3, 4/4, 5/3, or 5/4; or 10YR 3/4 or 4/4. Moist color is 5YR 3/2, 3/3, or 3/4; 7.5YR 3/2, 3/3, or 4/3; or 10YR 3/2 or 3/3. Texture is loam, gravelly loam, cobbly loam, clay loam, gravelly clay loam, or cobbly clay loam. The content of clay ranges from 18 to 35 percent. The content of gravel is 0 to 20 percent, and the content of cobbles is 0 to 30 percent. Reaction ranges from strongly acid to slightly acid.

The Bt5 horizon has dry color of 5YR 4/3, 4/4, or 5/4; 7.5YR 3/4, 4/3, 4/4, 5/3, or 5/4; or 10YR 3/4, 4/4, 5/4, or 3/6. Moist color is 5YR 3/3, 3/4, or 4/4; 7.5YR 3/3, 3/4, or 4/3; or 10YR 3/3, 3/4, 4/4, or 5/4. Texture is clay loam, gravelly clay loam, cobbly clay loam, very gravelly clay loam, very cobbly clay loam, cobbly clay, or very cobbly clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 10 to 30 percent, and the content of cobbles is 5 to 40 percent. Reaction is strongly acid or moderately acid.

Chico Series

The Chico series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on low fan terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Pachic Argixerolls

Typical Pedon

Chico loam, on a slope of less than 1 percent, under a cover of wheat stubble, at an elevation of 186 feet (57 m). When described on 6/22/1994, the soil was moist below a depth of 5 inches (13 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 5 inches (0 to 13 cm); brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; 23 percent clay; moderate medium and coarse subangular blocky structure parting to moderate very fine and fine granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine and common fine roots; few very fine to medium tubular and common fine and medium irregular pores; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bt1—5 to 10 inches (13 to 25 cm); brown (10YR 4/3) clay loam, dark brown (7.5YR 3/2) moist; 29 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and fine roots; few very fine to medium tubular and few fine and medium irregular pores; few discontinuous distinct clay films on faces of peds and in pores; slightly alkaline, pH 7.5 by Hellige-Truog; gradual smooth boundary.

Bt2—10 to 21 inches (25 to 53 cm); brown (10YR 4/3) clay loam, dark brown (7.5YR 3/2) moist; 29 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and few fine roots; many very fine to medium tubular pores; common discontinuous distinct clay films on faces of peds and in pores; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt3—21 to 32 inches (53 to 81 cm); brown (10YR 4/3) clay loam, dark brown (7.5YR 3/2) moist; 29 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine roots; common very fine and fine tubular pores; common discontinuous distinct clay films on faces of peds and in pores; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt4—32 to 50 inches (81 to 127 cm); brown (10YR 4/3) loam, dark brown (7.5YR 3/2) moist; 27 percent clay; moderate fine to coarse subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; common very fine roots; many very fine to medium tubular pores; common discontinuous distinct clay films on faces of peds and in pores; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt5—50 to 70 inches (127 to 178 cm); brown (7.5YR 5/3) loam, brown (7.5YR 4/3) moist; 25 percent clay; moderate fine to coarse subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; common very fine roots; many very fine to medium tubular pores; common discontinuous distinct clay films on faces of peds and in pores; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt6—70 to 80 inches (178 to 203 cm); brown (7.5YR 5/4) loam, brown (7.5YR 5/4) moist; 21 percent clay; weak fine and medium subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; common very fine roots; common very fine to medium tubular pores; common fine irregularly shaped reddish brown (5YR 4/4 moist) oxidized iron masses and few fine black (N 2/0 moist) soft iron-

manganese masses throughout; common discontinuous distinct clay films on faces of peds and in pores; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 1 mile south of Chico, approximately 1,500 feet north and 250 feet west of the southeast corner of sec. 2, T. 21 N., R. 1 E.; 39 degrees, 42 minutes, 2 seconds north latitude and 121 degrees, 49 minutes, 27 seconds west longitude; NAD27; USGS Quad: Chico, California.

Range in Characteristics

The thickness of the solum is more than 80 inches (203 cm). Depth to the argillic horizon is 4 to 24 inches (10 to 61 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from May to October (140 to 160 days). The particle-size control section averages 25 to 35 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 5 percent from 0 to 21 inches (0 to 53 cm) and is less than 1 percent from 21 to 80 inches (53 to 203 cm). By ammonium acetate, base saturation ranges from 95 to 100 percent throughout the profile. Some pedons have carbonates below a depth of 35 inches (89 cm).

The Ap horizon has dry color of 10YR 4/2, 4/3, 5/2, or 5/3 or 7.5YR 4/2, 4/3, 5/2, or 5/3. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/2. The content of clay ranges from 20 to 27 percent. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the Bt horizon has dry color of 10YR 4/3, 5/3, or 5/4 or 7.5YR 4/3, 5/2, 5/3, or 5/4. Moist color is 10YR 3/2, 3/3, or 4/3 or 7.5YR 3/2, 3/3, or 3/4. Texture is loam, clay loam, or silty clay loam. The content of clay ranges from 25 to 35 percent. Reaction ranges from slightly acid to slightly alkaline.

The lower part of the Bt horizon has dry color of 10YR 4/3, 5/3, or 5/4 or 7.5YR 4/2, 4/3, 5/3, 4/4, or 5/4. Moist color is 10YR 4/3 or 5/4 or 7.5YR 3/2, 3/3, 3/4, 4/3, or 4/4. Texture is loam or clay loam. The content of clay ranges from 18 to 35 percent. Oxidized iron masses and iron-manganese masses occur below a depth of 70 inches (178 cm). Reaction is neutral or slightly alkaline.

Chinacamp Series

The Chinacamp series consists of very deep, well drained soils that formed in colluvium derived from volcanic mudflow breccia. These soils are on side slopes in canyons on Cascade foothills. Slopes range from 3 to 70 percent. The mean annual precipitation is about 38 inches (965 mm), and the mean annual air temperature is about 59 degrees F (15 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs

Typical Pedon

Chinacamp gravelly loam, on an east-southeast-facing slope of 55 percent, under a cover of canyon live oak, California laurel, deerbrush, and Pacific poison oak, at an elevation of 490 feet (149 m). When described on 6/30/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 5 inches (3 to 13 cm); pale brown (10YR 6/3) gravelly loam, dark grayish brown (10YR 4/2) moist; 26 percent clay; moderate fine and medium subangular blocky structure parting to strong fine granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine to coarse tubular pores; 5 percent cobbles and 25 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt1—5 to 15 inches (13 to 38 cm); pale brown (10YR 6/3) gravelly clay loam, dark grayish brown (10YR 4/2) moist; 30 percent clay; moderate fine and medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 70 percent continuous faint clay films; 5 percent stones, 5 percent cobbles, and 20 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt2—15 to 29 inches (38 to 74 cm); pale brown (10YR 6/3) gravelly clay loam, dark grayish brown (10YR 4/2) moist; 34 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 5 percent boulders, 5 percent stones, 5 percent cobbles, and 20 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt3—29 to 38 inches (74 to 97 cm); brown (10YR 5/3) gravelly clay loam, dark grayish brown (10YR 4/2) moist; 37 percent clay; strong fine and medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine and fine and few medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 5 percent stones, 5 percent cobbles, 10 percent boulders, and 15 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt4—38 to 44 inches (97 to 112 cm); brown (10YR 5/3) gravelly clay loam, dark grayish brown (10YR 4/2) moist; 36 percent clay; strong fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 5 percent boulders, 5 percent stones, 5 percent cobbles, and 10 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt5—44 to 61 inches (112 to 155 cm); pale brown (10YR 6/3) extremely stony clay loam, brown (10YR 4/3) moist; 37 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 10 percent cobbles, 10 percent gravel, and 50 percent stones; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt6—61 to 72 inches (155 to 183 cm); light yellowish brown (10YR 6/4) very stony clay loam, brown (10YR 4/3) moist; 35 percent clay; moderate fine and medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine and fine roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 5 percent gravel, 10 percent cobbles, and 30 percent stones; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 2.7 miles south-southwest of Centerville, approximately 450 feet east and 1,800 feet south of the northwest corner of sec. 20, T. 22 N., R. 3 E.; 39 degrees, 45 minutes, 4 seconds north latitude and 121 degrees, 40 minutes, 20 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The particle-size control section averages 27 to 35 percent clay and 35 to 60 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 20 percent cobbles, 0 to 30 percent stones, and 0 to 15 percent boulders.

The A horizon has dry color of 10YR 6/3 or 7/3 or 7.5YR 6/4 or 7/2. Moist color is 10YR 4/2 or 7.5YR 4/3. Texture is gravelly loam, extremely cobbly loam, very gravelly

sandy clay loam, or very cobbly sandy clay loam. The content of clay ranges from 20 to 26 percent. The horizon has 5 to 30 percent gravel, 0 to 20 percent cobbles, 0 to 10 percent stones, and 0 to 5 percent boulders. Reaction is neutral or slightly acid.

The Bt horizon has dry color of 10YR 5/3, 5/4, 6/3, 6/4, 7/2, 7/3, or 7/4 or 7.5YR 6/6 or 7/4. Moist color is 10YR 4/2, 4/3, or 4/4 or 7.5YR 4/4 or 5/4. Texture is gravelly clay loam, very gravelly clay loam, extremely cobbly clay loam, very stony clay loam, extremely stony clay loam, extremely gravelly sandy clay loam, gravelly clay, or cobbly clay. The content of clay ranges from 27 to 42 percent. The horizon has 5 to 45 percent gravel, 5 to 45 percent cobbles, 0 to 30 percent stones, and 0 to 10 percent boulders. Reaction ranges from neutral to moderately acid.

Clear Lake Series

The Clear Lake series consists of very deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Endoaquerts

Typical Pedon

Clear Lake silty clay loam, on a slope of 0 percent, under a cover of dock, cocklebur, tules, arnica ssp., and bermudagrass, at an elevation of 55 feet (17 m). When described on 9/16/1993, the soil was moist throughout. Free water was moving laterally at a depth of 31 inches (79 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 6 inches (0 to 15 cm); gray (10YR 5/1) and grayish brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; 38 percent clay; moderate thin platy structure; slightly hard, firm, slightly sticky, moderately plastic; many very fine and common fine roots; few very fine tubular pores; noneffervescent; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

Akb—6 to 12 inches (15 to 31 cm); gray (10YR 5/1) silty clay, very dark gray (10YR 3/1) moist; 50 percent clay; moderate very fine subangular blocky structure; very hard, very firm, very sticky, very plastic; common very fine roots; few very fine tubular pores; common carbonate masses; common fine prominent strong brown (7.5YR 4/6) oxidized iron masses; strongly effervescent; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

Bkssb1—12 to 35 inches (31 to 89 cm); gray (10YR 5/1) silty clay, dark gray (10YR 4/1) moist; 50 percent clay; moderate medium prismatic structure; extremely hard, extremely firm, very sticky, very plastic; common very fine roots; few very fine tubular pores; slickensides; common carbonate masses; common fine prominent strong brown (7.5YR 4/6) oxidized iron masses and few fine prominent black (N 2/0) manganese masses; violently effervescent; moderately alkaline, pH 8.2 by Hellige-Truog; clear smooth boundary.

Bkssb2—35 to 50 inches (89 to 127 cm); light brownish gray (10YR 6/2) silty clay, dark gray (10YR 4/1) moist; 45 percent clay; moderate medium prismatic structure; extremely hard, extremely firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; slickensides; common carbonate masses and common fine prominent black (N 2/0) manganese masses; violently effervescent; moderately alkaline, pH 8.2 by Hellige-Truog; clear smooth boundary.

Bkgb1—50 to 60 inches (127 to 152 cm); light gray (10YR 7/1) silty clay, dark gray (10YR 4/1) moist; 42 percent clay; weak medium prismatic structure; very hard, extremely firm, very sticky, very plastic; few very fine roots; few very fine tubular

pores; strongly effervescent throughout; strongly alkaline, pH 8.5 by Hellige-Truog; gradual smooth boundary.

Bkgb2—60 to 70 inches (152 to 178 cm); light gray (10YR 7/2) silty clay, dark gray (5Y 4/1) moist; 45 percent clay; moderate fine angular blocky structure; very hard, extremely firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; strongly effervescent throughout; strongly alkaline, pH 8.5 by Hellige-Truog; gradual smooth boundary.

Bkgb3—70 to 72 inches (178 to 183 cm); light olive brown (2.5Y 5/3) silty clay, olive gray (5Y 5/2) and gray (5Y 5/1) moist; 50 percent clay; moderate fine angular blocky structure; very hard, extremely firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; strongly effervescent throughout; strongly alkaline, pH 8.5 by Hellige-Truog.

Type location: Butte County, California; about 16.7 miles northwest of Pennington, approximately 200 feet east and 2,300 feet south of the northwest corner of sec. 8, T. 17 N., R. 1 E.; 39 degrees, 20 minutes, 28 seconds north latitude and 121 degrees, 53 minutes, 26 seconds west longitude; NAD27; USGS Quad: Sanborn Slough, California.

Range in Characteristics

The depth of the soils is more than 72 inches (183 cm). The mean annual soil temperature is 62 to 66 degrees F (17 to 19 degrees C). The soil moisture control section is dry from July to October (120 to 125 days). The particle-size control section averages 45 to 55 percent clay. The soils are calcareous from a depth of 6 to 72 inches (15 to 183 cm). Surface-initiated cracks 0.4 inch (1 cm) or more wide extend to a depth of 25 inches (64 cm) or more. They are open from June to October (150 to 180 days) in nonirrigated areas and are closed the rest of the year. Slickensides occur at a depth of 12 to 80 inches (31 to 203 cm). Redoximorphic features occur mainly as oxidized iron masses and manganese masses from 0 to 50 inches (0 to 127 cm) and a reduced matrix below a depth of 50 inches (127 cm). A fluctuating water table can occur between the surface and 80 inches (203 cm) below the surface from December through May and is 40 to 80 inches (102 to 203 cm) below the surface from June through November. Overwash of silty clay loam ranges from 0.5 inch to 20 inches (1 to 51 cm) in thickness. Some pedons do not have an Ak horizon.

The A horizon has dry color of 10YR 3/1, 4/1, 5/1, or 5/2 or 5Y 3/1. Moist color is 10YR 2/1, 2/2, 3/1, 3/2, 4/2; 5Y 3/1 or 2/1; or N 3/0. Texture is silty clay loam. The content of clay ranges from 35 to 40 percent. Reaction ranges from neutral to moderately alkaline.

The Akb horizon has dry color of 10YR 4/1 or 5/1 or 5Y 3/1. Moist color is 10YR 2/1, 3/1, or 4/2. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. Reaction is slightly alkaline or moderately alkaline.

The Bkssb and Bgb horizons have dry color of 10YR 3/1, 4/1, 5/1, or 7/1 or 5Y 5/1. Moist color is 10YR 2/1, 2/2, 3/1, 3/2, or 4/1 or 2.5Y 3/1, 3/2, or 4/2. Texture is clay or silty clay. The content of clay ranges from 40 to 60 percent. Reaction is moderately alkaline or strongly alkaline.

The Bkgb horizon has dry color of 10YR 7/1 or 7/2 or 5Y 5/1 or 5/3. Moist color is 10YR 4/1 or 4/2; 5Y 4/1, 5/1, or 5/2; N 3/0; or 5GY 3/1. Texture is clay, silty clay, silty clay loam, or clay loam. The content of clay ranges from 35 to 60 percent. Reaction is moderately alkaline or strongly alkaline.

Clearhayes Series

The Clearhayes series consists of deep, somewhat poorly drained soils that formed in overbank alluvium over channel alluvium derived from volcanic rocks.

These soils are on bars on low strath terraces on Cascade foothills. Slopes range from 0 to 2 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Clearhayes sandy clay loam, on a south-facing slope of 0.5 percent, under a cover of filaree, medusahead, Mediterranean barley, and clover, at an elevation of 198 feet (60 m). When described on 4/5/2000, the soil was dry to a depth of 19 inches (48 cm), very slightly moist between 19 and 28 inches (48 and 71 cm), slightly moist between 28 and 38 inches (71 and 97 cm), and moist below 38 inches (97 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); pale brown (10YR 6/3) sandy clay loam, dark grayish brown (10YR 4/2) moist; 25 percent clay; moderate medium and thick platy structure; extremely hard, friable, slightly sticky, slightly plastic; few fine and common very fine roots; common very fine and fine tubular pores; 5 percent gravel; neutral, pH 6.7 by Hellige-Truog; clear smooth boundary.

Bt1—2 to 10 inches (5 to 25 cm); grayish brown (10YR 5/2) gravelly sandy clay loam, dark grayish brown (10YR 4/2) moist; 34 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; few fine and common very fine roots; common very fine to medium tubular pores; 80 percent continuous distinct clay films; 18 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bt2—10 to 19 inches (25 to 48 cm); grayish brown (10YR 5/2) gravelly sandy clay loam, dark grayish brown (10YR 4/2) moist; 30 percent clay; moderate fine and medium subangular blocky structure; very hard, very friable, moderately sticky, moderately plastic; common very fine roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 5 percent cobbles and 15 percent gravel; slightly alkaline, pH 7.4 by Hellige-Truog; clear smooth boundary.

C1—19 to 28 inches (48 to 71 cm); grayish brown (10YR 5/2) extremely gravelly sandy loam, dark gray (10YR 4/1) moist; 17 percent clay; single grain; slightly hard, very friable, slightly sticky, nonplastic; common very fine roots; many very fine and fine irregular and tubular pores; 25 percent cobbles and 40 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; gradual smooth boundary.

C2—28 to 38 inches (71 to 97 cm); light brownish gray (10YR 6/2) extremely gravelly loamy coarse sand, dark gray (10YR 4/1) moist; 2 percent clay; single grain; loose, nonsticky, nonplastic; few very fine roots; many very fine to medium interstitial pores; 35 percent cobbles and 40 percent gravel; strongly alkaline, pH 8.5 by Hellige-Truog; clear smooth boundary.

C3—38 to 46 inches (97 to 117 cm); very pale brown (10YR 7/4) extremely gravelly sandy clay loam, brown (10YR 5/3) moist; 26 percent clay; single grain; hard, very friable, slightly sticky, slightly plastic; many very fine to medium interstitial pores; 3 percent stones, 35 percent cobbles, and 40 percent gravel; strongly alkaline, pH 8.5 by Hellige-Truog; abrupt smooth boundary.

2Cr—46 inches (117 cm); very weakly cemented volcanic sandstone bedrock; strongly alkaline, pH 8.5.

Type location: Butte County, California; about 0.8 mile east of the Durham-Pentz Road/Highway 99 overpass, approximately 1,200 feet north and 2,400 feet west of the southeast corner of sec. 25, T. 21 N., R. 2 E.; 39 degrees, 38 minutes, 34 seconds north latitude and 121 degrees, 42 minutes, 5 seconds west longitude; NAD83; USGS Quad: Hamlin Canyon, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 68 degrees F (17 to 20 degrees C). The particle-size control section averages 27 to 35 percent clay and 5 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the bedrock and 13 inches (33 cm) below the surface from December through April. Rock fragments on the surface range from 0 to 30 percent gravel, 0 to 5 percent cobbles, and 0 to 2 percent stones. Some pedons do not have a C horizon.

The A horizon has dry color of 10YR 6/2, 6/3, or 6/4 or 7.5YR 5/3, 6/2, or 6/3. Moist color is 10YR 4/2, 4/3, or 5/2 or 7.5YR 4/2. Texture is sandy clay loam, loam, clay loam, gravelly sandy loam, or gravelly loam. The content of clay ranges from 18 to 30 percent. The horizon has 2 to 25 percent gravel and 0 to 5 percent cobbles. Reaction ranges from slightly acid to slightly alkaline

The Bt horizon has dry color of 10YR 5/2, 6/2, or 6/3 or 7.5YR 6/2, 6/3, or 5/3. Moist color is 10YR 4/1, 4/2, 5/2, or 5/3 or 7.5YR 4/2 or 4/3. Texture is sandy clay loam, clay loam, gravelly loam, gravelly clay loam, gravelly sandy clay loam, or very gravelly sandy clay loam. The content of clay ranges from 17 to 35 percent. The horizon has 5 to 35 percent gravel and 0 to 15 percent cobbles. Reaction ranges from neutral to strongly alkaline.

The C horizon has dry color of 10YR 6/2, 7/3, or 7/4 or 7.5YR 6/4. Moist color is 10YR 4/1 or 5/3 or 7.5YR 5/3. Texture is very gravelly coarse sandy loam, extremely gravelly sandy clay loam, extremely gravelly sandy loam, extremely gravelly loamy coarse sand, or very cobbly sandy clay loam. The content of clay ranges from 2 to 30 percent. The horizon has 20 to 60 percent gravel, 5 to 35 percent cobbles, and 0 to 15 percent stones. Reaction ranges from slightly alkaline to strongly alkaline.

Coalcanyon Series

The Coalcanyon series consists of very deep, well drained soils that formed in colluvium derived from basalt. These soils are on side slopes on basalt plateaus on volcanic Sierra Nevada foothills. Slopes range from 5 to 50 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, parasesquic, thermic Pachic Ultic Argixerolls

Typical Pedon

Coalcanyon very cobbly loam, on a west-facing slope of 45 percent, under a cover of hardwoods, shrubs, and annual grasses, at an elevation of 950 feet (290 m). When described on 6/26/2001, the soil was dry to a depth of 27 inches (69 cm) and moist below that depth. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (7.5YR 4/3) very cobbly loam, dark brown (7.5YR 3/2) moist; 16 percent clay; moderate fine granular structure; slightly hard, friable, slightly sticky, nonplastic; many very fine and fine roots; many fine irregular pores; 10 percent basalt gravel and 30 percent basalt cobbles; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.

BAt—2 to 11 inches (5 to 28 cm); brown (7.5YR 4/3) very cobbly loam, dark brown (7.5YR 3/2) moist; 18 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, nonplastic; many fine and medium roots throughout and common coarse roots between peds; many fine irregular pores; 5 percent discontinuous faint clay films on surfaces along pores; 15 percent basalt gravel and 40 percent basalt cobbles; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.

Bt1—11 to 27 inches (28 to 69 cm); brown (7.5YR 4/3) very cobbly loam, dark brown (7.5YR 3/2) moist; 22 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and medium roots throughout and common coarse roots between peds; common fine and medium tubular pores; 20 percent discontinuous faint clay films on surfaces along pores; 20 percent basalt gravel and 30 percent basalt cobbles; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.

Bt2—27 to 43 inches (69 to 109 cm); brown (7.5YR 4/3) very cobbly loam, dark brown (7.5YR 3/3) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, firm, moderately sticky, slightly plastic; common very fine, fine, and coarse roots between peds; common fine and medium tubular pores; 35 percent discontinuous distinct clay films on surfaces along pores; 25 percent basalt gravel and 35 percent basalt cobbles; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

Bt3—43 to 65 inches (109 to 165 cm); reddish brown (5YR 4/3) extremely cobbly clay loam, dark reddish brown (5YR 3/3) moist; 29 percent clay; moderate medium subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; common very fine and fine roots between peds; common fine tubular pores; 50 percent discontinuous distinct clay films on surfaces along pores; 20 percent basalt gravel and 50 percent basalt cobbles; moderately acid, pH 6.0 by Hellige-Truog.

Type location: Butte County, California; about 5.7 miles northwest of Oroville, approximately 1,500 feet east and 1,300 feet south of the northwest corner of sec. 13, T. 20 N., R. 3 E.; 39 degrees, 35 minutes, 35 seconds north latitude and 121 degrees, 35 minutes, 23 seconds west longitude; NAD27; USGS Quad: Oroville, California.

Range in Characteristics

The depth of to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 18 to 27 percent clay and 35 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. The content of organic matter is 1 to 13 percent to a depth of 43 inches (3 to 109 cm) and is less than 1 percent below that depth. By ammonium acetate, base saturation ranges from 78 to 91 percent throughout the profile. By sum of cations, it ranges from 55 to 58 percent. Rock fragments on the surface range from 10 to 60 percent gravel, 5 to 65 percent cobbles, 0 to 25 percent stones, and 0 to 20 percent boulders. Some pedons have silty textures throughout.

The A horizon has dry color of 10YR 3/3, 3/4, 4/2, 4/3, or 4/4 or 7.5YR 4/3. Moist color is 10YR 2/2, 3/2, or 3/3 or 7.5YR 3/2. Texture is very cobbly loam, very gravelly loam, or gravelly loam. The content of clay ranges from 14 to 18 percent. The horizon has 10 to 55 percent gravel, 5 to 35 percent cobbles, 0 to 45 percent stones, and 0 to 15 percent boulders. Reaction is slightly acid or neutral.

The BAt horizon has dry color of 10YR 4/2 or 4/3 or 7.5YR 4/3 or 4/4. Moist color is 10YR 2/2, 3/2, or 3/3 or 7.5YR 3/2 or 3/3. Texture is very cobbly loam or very gravelly loam. The content of clay ranges from 16 to 22 percent. The horizon has 15 to 50 percent gravel, 5 to 40 percent cobbles, 0 to 55 percent stones, and 0 to 15 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 4/3, 4/4, 4/6, 5/3, or 5/4; 7.5YR 4/3; or 5YR 4/3. Moist color is 10YR 3/2, 3/3, 3/4, or 4/4 or 7.5YR 3/2 or 3/3. Texture is very cobbly loam, extremely cobbly loam, very cobbly clay loam, extremely cobbly clay loam, extremely gravelly loam, or extremely gravelly clay loam. The content of clay ranges from 22 to 35 percent. The horizon has 20 to 80 percent gravel, 5 to 50 percent cobbles, 0 to 60 percent stones, and 0 to 15 percent boulders. Reaction ranges from moderately acid to neutral.

Coalcanyon Taxadjunct

The Coalcanyon taxadjunct consists of very deep, well drained soils that formed in colluvium derived from basalt. These soils are on side slopes and benches in canyons on Cascade foothills. Slopes range from 3 to 70 percent. The mean annual precipitation is about 37 inches (940 mm), and the mean annual air temperature is about 59 degrees F (15 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs

Typical Pedon

Coalcanyon taxadjunct, on a northwest-facing slope of 15 percent, under a cover of blue oak, interior live oak, foothill pine, deerbrush, and annual grasses and forbs, at an elevation of 800 feet (244 meters). When described on 5/31/2000, the soil was dry to a depth of 42 inches (107 cm) and slightly moist from 42 to 72 inches (107 to 183 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); light brown (7.5YR 6/4) very gravelly loam, brown (7.5YR 4/2) moist; 23 percent clay; moderate fine and medium granular structure; hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine to medium irregular and tubular pores; 15 percent cobbles and 20 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bt1—2 to 6 inches (5 to 15 cm); light brown (7.5YR 6/4) very gravelly loam, brown (7.5YR 4/3) moist; 26 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous faint clay films on faces of peds; 15 percent cobbles and 20 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.

Bt2—6 to 14 inches (15 to 36 cm); brown (7.5YR 5/4) very gravelly clay loam, brown (7.5YR 4/3) moist; 28 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common coarse and many very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous faint clay films on faces of peds; 15 percent cobbles and 20 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.

Bt3—14 to 24 inches (36 to 61 cm); brown (7.5YR 5/4) very gravelly clay loam, brown (7.5YR 4/3) moist; 30 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to coarse roots; many very fine to medium tubular pores; 80 percent continuous faint clay films on faces of peds; 15 percent cobbles and 20 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; clear smooth boundary.

Bt4—24 to 42 inches (61 to 107 cm); brown (7.5YR 5/3) extremely cobbly clay loam, brown (7.5YR 4/2) moist; 33 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films on faces of peds; 35 percent gravel and 35 percent cobbles; slightly acid, pH 6.6 by Hellige-Truog; clear smooth boundary.

2Bt5—42 to 54 inches (107 to 137 cm); brown (7.5YR 5/4) very cobbly clay, brown (7.5YR 4/3) moist; 42 percent clay; strong fine and medium subangular blocky structure; hard, friable, very sticky, very plastic; common very fine and fine and few medium roots; common very fine and fine tubular pores; 80 percent continuous distinct clay films on faces of peds; 25 percent gravel and 25 percent cobbles; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.

2Bt6—54 to 72 inches (137 to 183 cm); brown (7.5YR 5/4) very gravelly clay loam, brown (7.5YR 4/3) moist; 39 percent clay; strong fine and medium subangular blocky structure; hard, friable, very sticky, very plastic; few very fine to coarse

roots; common very fine and fine tubular pores; 80 percent continuous distinct clay films on faces of peds; 20 percent cobbles and 40 percent gravel; neutral, pH 6.8 by Hellige-Truog.

Type location: Butte County, California; about 0.75 mile west-southwest of the intersection of Highway 32 and Ten Mile Road, approximately 800 feet south and 1,250 feet west of the center of sec. 35, T. 23 N., R. 2 E.; 39 degrees, 48 minutes, 15 seconds north latitude and 121 degrees, 43 minutes, 36 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 180 days). The particle-size control section averages 27 to 35 percent clay and 35 to 80 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 10 to 60 percent gravel, 5 to 50 percent cobbles, 0 to 30 percent stones, and 0 to 25 percent boulders.

The A horizon has dry color of 7.5YR 6/2, 6/3, or 6/4 or 10YR 6/2, 6/3, 5/4, or 6/4. Moist color is 7.5YR 3/2 or 4/2 or 10YR 3/2, 4/2, or 4/3. Texture is very gravelly loam, very cobbly loam, or extremely cobbly loam. The content of clay ranges from 20 to 27 percent. The horizon has 20 to 35 percent gravel, 10 to 25 percent cobbles, 0 to 25 percent stones, and 0 to 20 percent boulders. Reaction is slightly acid or neutral.

The upper part of the Bt horizon has dry color of 7.5YR 4/3, 5/3, 5/4, 6/3, or 6/4 or 10YR 5/3 or 6/4. Moist color is 7.5YR 4/2 or 4/3 or 10YR 4/2 or 4/3. Texture is very gravelly loam, extremely cobbly loam, very stony loam, very gravelly clay loam, very cobbly clay loam, very stony clay loam, extremely gravelly clay loam, extremely cobbly clay loam, or extremely stony clay loam. The content of clay ranges from 23 to 35 percent. The content of gravel is 5 to 40 percent, the content of cobbles is 15 to 35 percent, the content of stones is 0 to 30 percent, and the content of boulders is 0 to 15 percent. Reaction is slightly acid or neutral.

The lower part of the Bt horizon has dry color of 7.5YR 4/3, 5/3, or 5/4 or 10YR 6/3. Moist color is 7.5YR 4/2 or 4/3 or 10YR 4/3. Texture is very gravelly clay loam, very cobbly clay loam, extremely stony clay loam, very cobbly clay, or extremely bouldery clay. The content of clay ranges from 30 to 50 percent. The content of gravel is 5 to 40 percent, the content of cobbles is 10 to 35 percent, the content of stones is 0 to 30 percent, and the content of boulders is 0 to 15 percent. Reaction is slightly acid or neutral.

The Coalcanyon taxadjunct is a taxadjunct because it has lighter colors in the A horizon than is defined as the range for the series. This difference does not significantly affect the use, management, or interpretations of the soils.

Codora Series

The Codora series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from igneous, metamorphic, and sedimentary rocks. These soils are on flood plains. Slopes range from 0 to 2 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, superactive, thermic Fluventic Haploxerepts

Typical Pedon

Codora silty clay loam, on a slope of 1 percent, under a cover of nonirrigated barley, at an elevation of 85 feet (26 m). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 6 inches (0 to 15 cm); grayish brown (2.5Y 5/2) silty clay loam, very dark grayish brown (2.5Y 3/2) moist; 4 percent sand; 65 percent silt; 31 percent clay; coarse subangular blocky structure parting to medium granular; hard, firm, slightly sticky, moderately plastic; many very fine and fine roots; few very fine tubular and many very fine to medium irregular pores; neutral, pH 6.7; abrupt smooth boundary.

A—6 to 11 inches (15 to 28 cm); grayish brown (2.5Y 5/2) silty clay loam, very dark grayish brown (2.5Y 3/2) moist; 4 percent sand; 64 percent silt; 32 percent clay; moderate coarse subangular blocky structure; hard, firm, slightly sticky, moderately plastic; many very fine and fine roots; few very fine tubular and many very fine to medium irregular pores; neutral, pH 6.7; clear smooth boundary.

Bw1—11 to 22 inches (28 to 56 cm); grayish brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; 3 percent sand; 59 percent silt; 38 percent clay; weak coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; many very fine roots; many very fine and fine tubular and common very fine to medium irregular pores; organic stains and 3 percent patchy clay films; neutral, pH 7.1; clear smooth boundary.

Bw2—22 to 38 inches (56 to 96 cm); 50 percent grayish brown (10YR 5/2) and 50 percent light brownish gray (10YR 6/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; 4 percent sand; 57 percent silt; 39 percent clay; massive; hard, firm, moderately sticky, moderately plastic; few very fine roots; many very fine and fine tubular and common very fine irregular pores; 1 percent patchy clay films; neutral, pH 7.2; clear smooth boundary.

Bw3—38 to 60 inches (96 to 152 cm); pale brown (10YR 6/3) silty clay loam, dark brown (10YR 3/3) moist; 7 percent sand; 61 percent silt; 32 percent clay; moderate coarse subangular blocky structure; hard, firm, slightly sticky, moderately plastic; few very fine roots; many very fine and fine tubular and common very fine to medium irregular pores; finely disseminated carbonates; carbonate masses lining pores; slight effervescence; moderately alkaline, pH 8.1.

Type location: Glenn County, California; about 0.67 mile northeast of Butte City, 1,500 feet west and 2,500 feet south of the northwest corner of sec. 28, T. 19 N., R. 1 W.; 39 degrees, 28 minutes, 20 seconds north latitude and 121 degrees, 58 minutes, 50 seconds west longitude; NAD27; USGS Quad: Butte City, California.

Range in Characteristics

Depth to buried silty clay is 60 to 80 inches (152 to 203 cm) or more. The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 36 to 40 percent clay. Mineralogy is mixed. The soils are intermittently calcareous from a depth of 38 to 60 inches (96 to 152 cm). A fluctuating water table can occur between depths of 38 and 80 inches (96 to 203 cm) or more from December through April. Redoximorphic features, such as oxidized iron masses or manganese masses, may occur in all horizons.

The Ap and A horizons have dry color of 2.5Y 5/2 or 6/2. Moist color is 2.5Y 3/2 or 4/2. Texture is silty clay loam or clay loam. The content of clay ranges from 27 to 40 percent. The content of organic matter is 1 to 3 percent. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the Bw horizon has dry color of 10YR 5/2 or 6/2. Moist color is 10YR 3/2. Texture is silty clay loam, clay loam, or clay. The content of clay ranges from 35 to 40 percent. The content of organic matter is 0.5 to 3 percent. Reaction is neutral or slightly alkaline.

The lower part of the Bw horizon has dry color of 10YR 5/3, 6/3, or 6/4. Moist color is 10YR 3/3 or 4/4. Texture is silty clay loam, silty clay, or clay. The content of clay

ranges from 27 to 45 percent. Calcium carbonate is finely disseminated. The content of organic matter is 0.5 to 1 percent. Reaction is slightly alkaline or moderately alkaline.

Columbia Series

The Columbia series consists of very deep, somewhat poorly drained soils that formed in stratified overbank alluvium derived from igneous, metamorphic, and sedimentary rocks. These soils are in sloughs and active channels within the meander belt portion of the flood plains along the Sacramento and Feather Rivers. Slopes range from 0 to 2 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Coarse-loamy, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents

Typical Pedon

Columbia stratified sand to fine sandy loam, on a slope of 2 percent, under a cover of California sycamore, willow, and black walnut, at an elevation of 150 feet (46 m). When described on 9/21/1988, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 5 inches (0 to 13 cm); yellowish brown (10YR 5/4), stratified sand to fine sandy loam, dark grayish brown (10YR 4/2) moist; 10 percent clay; single grain and moderate fine granular structure; hard, friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine interstitial pores; neutral, pH 7.3 by Hellige-Truog; abrupt smooth boundary.

C1—5 to 10 inches (13 to 25 cm); pale brown (10YR 6/3), stratified silt loam to sandy loam, brown (10YR 4/3) moist; 10 percent clay; strong thin platy structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; many very fine interstitial pores; 1 percent fine distinct dark yellowish brown (10YR 4/6 moist) oxidized iron masses; neutral, pH 7.3 by Hellige-Truog; abrupt smooth boundary.

C2—10 to 29 inches (25 to 74 cm); yellowish brown (10YR 5/4) loam, brown (10YR 4/3) moist; 10 percent clay; weak fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; few fine and many very fine tubular pores; 4 percent fine distinct dark yellowish brown (10YR 4/6 moist) oxidized iron masses; slightly alkaline, pH 7.6 by Hellige-Truog; clear smooth boundary.

C3—29 to 37 inches (74 to 94 cm); yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 3/4) moist; 9 percent clay; massive; soft, very friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine tubular pores; 1 percent fine distinct dark yellowish brown (10YR 4/6 moist) oxidized iron masses; slightly alkaline, pH 7.6 by Hellige-Truog; abrupt smooth boundary.

C4—37 to 46 inches (94 to 117 cm); yellowish brown (10YR 5/4) sand, brown (10YR 4/3) moist; 5 percent clay; single grain; loose, nonsticky, nonplastic; few very fine and fine roots; many very fine interstitial pores; 1 percent fine distinct dark yellowish brown (10YR 4/6 moist) oxidized iron masses; slightly alkaline, pH 7.6 by Hellige-Truog; abrupt smooth boundary.

C5—46 to 60 inches (117 to 152 cm); light gray (10YR 7/1), stratified fine sandy loam to fine sand, dark grayish brown (10YR 4/2) moist; 8 percent clay; massive; loose, nonsticky, nonplastic; few very fine and fine roots; many very fine tubular pores; 4 percent fine distinct dark yellowish brown (10YR 4/6 moist) oxidized iron masses; slightly alkaline, pH 7.6 by Hellige-Truog.

Type location: Butte County, California; about 3.8 miles southwest of Cana, approximately 5,500 feet west and 2,900 feet north of the corner of T. 22 N. and T. 23 N., R. 1 W. and R. 2 W.; in an unsectionized area in the Bosquejo Land Grant; 39 degrees, 48 minutes, 22 seconds north latitude and 122 degrees, 2 minutes, 55 seconds west longitude; NAD27; USGS Quad: Foster Island, California.

Range in Characteristics

The depth of the soils is more than 60 inches (152 cm), and the depth to gravel ranges from 40 to 60 inches (102 to 152 cm) or more. The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 10 to 18 percent clay. Mineralogy is mixed. Base saturation is assumed to range from 90 to 100 percent throughout the profile. A fluctuating water table can occur at a depth of 20 to 72 inches (51 to 183 cm) from December through April. Flood debris, such as logs, limbs, leaves, and grass, commonly is on the surface.

The A horizon has dry color of 10YR 5/3, 5/4, 6/2, 6/3, or 7/2. Moist color is 10YR 4/2 or 4/3. The horizon has strata of sand, loamy sand, loamy fine sand, fine sandy loam, or loam, and the texture may change seasonally following periods of flooding. The content of clay ranges from 5 to 20 percent. The content of gravel is 0 to 5 percent. The content of organic matter is 1 to 3 percent and decreases irregularly with increasing depth. Reaction is neutral or slightly alkaline.

The C horizon has dry color of 10YR 5/4, 6/3, or 7/1. Moist color is 10YR 3/3, 3/4, 4/2, 4/3, 4/4, or 6/2. The horizon has strata of fine sandy loam, very fine sandy loam, loamy fine sand, loam, silt loam, or gravelly sand. The content of clay ranges from 5 to 18 percent. The content of gravel generally is 0 to 5 percent. It is as much as 35 percent below a depth of 40 inches (102 cm). The content of organic matter is 0.5 to 2 percent and decreases irregularly with increasing depth. Redoximorphic features occur as few or common soft oxidized iron masses. Reaction is neutral or slightly alkaline.

Columbia Taxadjunct

The Columbia taxadjunct consists of very deep, poorly drained soils that formed in alluvium derived from igneous, metamorphic, and sedimentary rocks. These soils are in partially filled oxbows within the meander belt portion of the flood plain along the Sacramento River. Slopes are 0 to 1 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Coarse-loamy, mixed, superactive, nonacid, thermic Aeric Fluvaquents

Typical Pedon

Columbia taxadjunct stratified fine sandy loam, on a slope of 1 percent, under a cover of sedges, hardstem tule, cattail, cocklebur, willow, and California sycamore, at an elevation of 95 feet (29 m). When described on 5/15/1989, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

C1—0 to 8 inches (0 to 20 cm); light brownish gray (10YR 6/2), stratified fine sandy loam, dark grayish brown (10YR 4/2) moist; 10 percent clay; weak medium platy structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine to medium roots; common very fine to medium irregular pores; 25 percent fine distinct dark yellowish brown (10YR 4/4 moist) oxidized iron masses; neutral, pH 7.2 by Hellige-Truog; abrupt smooth boundary.

C2—8 to 10 inches (20 to 25 cm); light brownish gray (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; 8 percent clay; weak medium platy structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine to medium roots; common very fine to medium tubular pores; 16 percent fine distinct dark yellowish brown (10YR 4/4 moist) oxidized iron masses; neutral, pH 7.2 by Hellige-Truog; abrupt smooth boundary.

C3—10 to 19 inches (25 to 48 cm); pale brown (10YR 6/3), stratified fine sandy loam, dark grayish brown (10YR 4/2) moist; 9 percent clay; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine and fine tubular pores; 15 percent fine distinct dark yellowish brown (10YR 4/4 and 4/6 moist) oxidized iron masses; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

C4—19 to 30 inches (48 to 76 cm); pale brown (10YR 6/3), stratified fine sandy loam, dark brown (10YR 3/3) moist; 9 percent clay; weak medium platy structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine and fine tubular pores; 25 percent fine distinct dark yellowish brown (10YR 4/4 and 4/6 moist) oxidized iron masses; slightly alkaline, pH 7.4 by Hellige-Truog; clear smooth boundary.

C5—30 to 40 inches (76 to 102 cm); light olive gray (5Y 6/2), stratified silt loam, dark gray (5Y 4/1) moist; 10 percent clay; weak medium platy structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine and fine tubular pores; 25 percent fine prominent dark yellowish brown (10YR 4/4 and 4/6 moist) oxidized iron masses; neutral, pH 7.3 by Hellige-Truog; clear smooth boundary.

C6—40 to 60 inches (102 to 152 cm); pale brown (10YR 6/3), stratified silt loam, dark grayish brown (10YR 4/2) moist; 12 percent clay; weak thin platy structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots; 30 percent fine distinct dark yellowish brown (10YR 4/4 and 4/6 moist) oxidized iron masses; neutral, pH 7.3 by Hellige-Truog.

Type location: Butte County, California; about 3.4 miles south of Ord Ferry Bridge, approximately 16,000 feet south of the boundary between T. 20 N. and T. 21 N. and 21,000 feet west of the Mt. Diablo meridian; in an unsectionized area in the Llano Seco Land Grant; 39 degrees, 34 minutes, 37 seconds north latitude and 121 degrees, 59 minutes, 22 seconds west longitude; NAD27; USGS Quad: Llano Seco, California.

Range in Characteristics

The soils are more than 60 inches (152 cm) deep. The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 10 to 15 percent clay and 0 to 5 percent rock fragments, mostly well rounded gravel. Mineralogy is mixed. The soils are not calcareous. The content of organic matter is 0.5 to 1.3 percent and decreases irregularly with increasing depth. Base saturation ranges from 90 to 100 percent throughout the profile. A fluctuating water table can occur from the surface to a depth of 24 inches (61 cm) from December through April and is usually below 40 inches (102 cm) from June to November. Redoximorphic features, such as soft oxidized iron masses with color of 10YR 4/4 or 4/6, occur in all horizons. Also, iron depletions with color of 5Y 4/1 occur below a depth of 20 inches (51 cm).

The C horizon has dry color of 10YR 6/2 or 6/3, 2.5Y 6/2, or 5Y 6/2. Moist color is 10YR 3/3, 4/2, or 5/1; 2.5Y 4/2; or 5Y 4/1 or 4/2. Texture is stratified loamy very fine sand, silt loam, or fine sandy loam. The content of clay ranges from 5 to 15 percent. The content of gravel is 0 to 5 percent. Charcoal or organic fragments are common. Reaction is neutral or slightly alkaline.

Some pedons have lenses of sand and/or gravel.

The Columbia taxadjunct is a taxadjunct because it has aquic conditions, chroma of 2 or less, and redoximorphic concentrations at a depth of 16 to 20 inches (41 to 51 cm), which is higher in the profile than is defined as the range for the series. These differences do not significantly affect the use, management, and interpretations of the soils.

Conejo Series

The Conejo series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on distal alluvial fans. Slopes range from 0 to 2 percent. The mean annual precipitation is about 21 inches (533 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Pachic Haploxerolls

Typical Pedon

Conejo clay loam, in an area of milo, at an elevation of 135 feet (41 m); redescribed on 7/20/1993. (Colors are for dry soil unless otherwise noted.)

Ap—0 to 5 inches (0 to 13 cm); dark gray (10YR 4/1) clay loam, very dark gray (10YR 3/1) moist; 31 percent clay; moderate medium and coarse subangular blocky and strong medium granular structure; very hard, friable, moderately sticky, moderately plastic; many fine and medium irregular pores; slightly alkaline, pH 7.5 by Hellige-Truog; abrupt wavy boundary.

A1—5 to 19 inches (13 to 48 cm); very dark grayish brown (10YR 3/2) clay loam, very dark brown (10YR 2/2) moist; 31 percent clay; moderate coarse subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; common very fine roots; many very fine and fine tubular and many fine irregular pores; slightly alkaline, pH 7.5 by Hellige-Truog; clear wavy boundary.

A2—19 to 30 inches (48 to 76 cm); very dark grayish brown (10YR 3/2) clay loam, very dark grayish brown (10YR 3/2) moist; 31 percent clay; moderate medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; common very fine roots; many very fine and few fine tubular pores; few pressure faces; common fine iron-manganese nodules about 1 mm in diameter; 1 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; gradual wavy boundary.

Bw1—30 to 48 inches (76 to 122 cm); dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; 29 percent clay; moderate coarse subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; common very fine roots; many very fine and fine tubular and many fine irregular pores; many pressure faces; few fine iron-manganese nodules about 1 mm in diameter; 2 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear wavy boundary.

Bw2—48 to 70 inches (122 to 178 cm); brown (10YR 5/3) sandy loam, dark yellowish brown (10YR 4/4) moist; 19 percent clay; weak fine and medium subangular blocky structure; slightly hard, weakly brittle but friable, nonsticky, slightly plastic; common very fine roots; many very fine and few fine and medium tubular pores; slightly effervescent in seams; common medium oxidized iron masses; 1 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog.

Type location: Butte County, California; about 6 miles south of Chico, on the west side of Aquas Frias Road, approximately 800 feet south of northeast corner of sec. 33, T. 21 N., R. 1 E.; 39 degrees, 38 minutes, 10 seconds north latitude and 121 degrees, 51 minutes, 40 seconds west longitude; NAD27; USGS Quad: Chico, California.

Range in Characteristics

The depth of the soils is more than 80 inches (203 cm). The mean annual soil temperature is 59 to 62 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about May to October (about 140 to 160 days) The particle-size control section averages 27 to 35 percent clay and has some gravel.

Some pedons have overwash of fine sandy loam or loam less than 20 inches (51 cm) thick. These pedons are clay loam or loam in the Ab horizon and in the upper part of the Bw horizon and have 0 to 5 percent gravel and average 18 to 35 percent clay in the particle-size control section. The extent of this overwash phase is about 600 to 700 acres. The overwash is the result of hydraulic mine deposits splaying out of the early levees on Butte Creek, north of Durham.

The Ap and A horizons have dry colors of 10YR 3/2, 4/1, 5/2, or 5/3. Moist color is 10YR 2/2, 3/1, or 3/2. Texture is clay loam. The content of clay ranges from 27 to 35 percent. The content of gravel is 0 to 2 percent. The content of organic matter is 3 to 6 percent. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the Bw horizon has dry colors of 10YR 4/2, 4/3, 5/2, or 5/3. Moist color is 10YR 3/2, 3/3, 4/2, or 4/3 or 7.5YR 3/2 or 4/2. Texture is clay loam. The content of clay ranges from 27 to 35 percent. The content of gravel is 0 to 2 percent. Reaction ranges from slightly acid to slightly alkaline.

The lower part of the Bw horizon has dry colors of 10YR 5/3 or 7.5YR 4/2 or 6/4. Moist color is 10YR 4/2, 4/3, 4/4, 5/3, or 5/4. Texture is sandy loam, fine sandy loam, loam, or clay loam. The content of clay ranges from 15 to 35 percent. The content of gravel is 0 to 2 percent. Reaction ranges from neutral to moderately alkaline. In some pedons segregated or secondary lime is at a depth of more than 30 inches (76 cm). Some pedons have redoximorphic features within 40 inches (102 cm) of the surface, and a few pedons have redoximorphic features within 30 inches (76 cm) of the surface.

Coonhollow Series

The Coonhollow series consists of deep, well drained soils that formed in colluvium derived from basalt. These soils are on convex side slopes on basalt plateaus on volcanic Sierra Nevada foothills. Slopes range from 5 to 50 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, parasesquic, thermic Pachic Ultic Argixerolls

Typical Pedon

Coonhollow gravelly loam, on a northwest-facing slope of 45 percent, under a cover of hardwoods, shrubs, and annual grasses, at an elevation of 1,020 feet (311 m). When described on 10/31/2000, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (7.5YR 4/3) gravelly loam, dark brown (7.5YR 3/2) moist; 16 percent clay; weak fine granular structure; soft, very friable, nonsticky, nonplastic; many fine roots throughout; many fine irregular pores; 10 percent basalt cobbles and 15 percent basalt gravel; neutral, pH 5.5 by pH meter 1:1 water; clear smooth boundary.

ABt—3 to 11 inches (8 to 28 cm); brown (7.5YR 4/3) very cobbly loam, dark reddish brown (5YR 3/3) moist; 19 percent clay; weak medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and medium roots throughout and few coarse roots between peds; few fine tubular and common fine irregular pores; 10 percent discontinuous distinct clay films on

surfaces along pores; 15 percent basalt gravel and 30 percent basalt cobbles; neutral, pH 5.9 by pH meter 1:1 water; gradual wavy boundary.

Bt1—11 to 22 inches (28 to 56 cm); brown (7.5YR 4/3) very cobbly loam, dark reddish brown (5YR 3/3) moist; 23 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common fine and very coarse roots throughout; common fine tubular and common medium irregular pores; 20 percent discontinuous distinct clay films on surfaces along pores; 15 percent basalt gravel and 40 percent basalt cobbles; neutral, pH 6.1 by pH meter 1:1 water; clear wavy boundary.

Bt2—22 to 32 inches (56 to 81 cm); brown (7.5YR 4/3) extremely cobbly loam, dark reddish brown (5YR 3/3) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common fine and few very fine roots between peds and few very coarse roots throughout; common medium tubular pores; 35 percent discontinuous distinct clay films on surfaces along pores; 15 percent basalt gravel and 50 percent basalt cobbles; slightly acid, pH 6.4 by pH meter 1:1 water; clear wavy boundary.

Bt3—32 to 45 inches (81 to 114 cm); brown (7.5YR 5/3) extremely cobbly clay loam, brown (7.5YR 4/3) moist; 29 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; few fine and common medium roots between peds and common very coarse roots throughout; common medium tubular pores; 45 percent discontinuous distinct clay films on surfaces along pores; 20 percent basalt gravel and 55 percent basalt cobbles; slightly acid, pH 6.4 by pH meter 1:1 water; clear wavy boundary.

Cr—45 to 50 inches (114 to 127 cm); moderately cemented basalt bedrock; abrupt wavy boundary.

R—50 inches (127 cm); indurated basalt bedrock.

Type location: Butte County, California; about 5.1 miles north of downtown Oroville, approximately 1,750 feet east and 1,800 feet north of the southwest corner of sec. 18, T. 20 N., R. 4 E.; 39 degrees, 35 minutes, 18 seconds north latitude and 121 degrees, 34 minutes, 15 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 18 to 27 percent clay and 35 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. The content of organic matter is 1 to 13 percent to a depth of 32 inches (81 cm) and is less than 1 percent from 32 to 50 inches (81 to 127 cm). By ammonium acetate, base saturation ranges from 78 to 91 percent throughout the profile. By sum of cations, it ranges from 55 to 58 percent. Rock fragments on the surface range from 10 to 60 percent gravel, 5 to 65 percent cobbles, 0 to 25 percent stones, and 0 to 20 percent boulders. Some pedons have silty textures.

The A horizon has dry color of 7.5YR 3/4 or 4/3 or 10YR 3/3, 4/3, or 5/3. Moist color is 7.5YR 3/2 or 3/3 or 10YR 2/2, 3/2, or 3/3. Texture is gravelly loam, loam, very gravelly loam, or very cobbly loam. The content of clay ranges from 16 to 22 percent. The horizon has 10 to 55 percent gravel, 5 to 35 percent cobbles, 0 to 45 percent stones, and 0 to 15 percent boulders. Reaction ranges from strongly acid to neutral.

The ABt horizon has dry color of 7.5YR 4/3 or 10YR 5/3 or 5/4. Moist color is 5YR 3/3, 7.5YR 4/3, or 10YR 3/2 or 3/3. Texture is very cobbly loam, loam, gravelly loam, or very gravelly loam. The content of clay ranges from 18 to 22 percent. The horizon has 10 to 50 percent gravel, 5 to 40 percent cobbles, 0 to 55 percent stones, and 0 to 15 percent boulders. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 7.5YR 4/3, 5/3, or 5/4 or 10YR 3/4, 4/3, 4/4, 5/2, or 5/3. Moist color is 5YR 3/3 or 7.5YR 4/3, 3/2, 3/3, or 3/4. Texture is very cobbly loam,

extremely cobbly loam, very cobbly clay loam, extremely cobbly clay loam, gravelly loam, very gravelly loam, gravelly clay loam, very gravelly clay loam, or extremely gravelly clay loam. The content of clay ranges from 18 to 38 percent. The horizon has 15 to 80 percent gravel, 5 to 60 percent cobbles, 0 to 60 percent stones, and 0 to 15 percent boulders. Reaction is slightly acid or neutral.

Coridge Series

The Coridge series consists of moderately deep, moderately well drained soils that formed in residuum derived from basalt. These soils are on the top of ridges on Cascade foothills. Slopes range from 3 to 15 percent. The mean annual precipitation is about 29 inches (736 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Coridge bouldery loam, on a southwest-facing slope of 7 percent, under a cover of Mediterranean barley, soft chess, grasspink, dandelion, and scattered blue oak and foothill pine, at an elevation of 1,030 feet (314 m). When described on 5/20/1998, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 3 cm); brown (7.5YR 5/4) bouldery loam, brown (7.5YR 4/2) moist; 22 percent clay; moderate medium platy structure parting to moderate fine and medium subangular blocky; hard, friable, slightly sticky, slightly plastic; many very fine roots; few very fine and fine irregular and tubular pores; 10 percent medium irregular oxidized iron masses lining pores; 5 percent gravel and 10 percent boulders; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

Bt1—1 to 6 inches (3 to 15 cm); reddish brown (5YR 5/4) gravelly loam, reddish brown (5YR 4/3) moist; 25 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; common very fine and fine tubular pores; 60 percent discontinuous distinct clay films; 5 percent medium irregular iron-manganese masses between peds; 10 percent boulders and 20 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; gradual smooth boundary.

Bt2—6 to 12 inches (15 to 30 cm); reddish brown (5YR 5/4) gravelly clay loam, reddish brown (5YR 4/3) moist; 29 percent clay; moderate fine and medium subangular blocky structure; extremely hard, friable, slightly sticky, moderately plastic; common very fine and fine and few medium roots; many very fine and fine tubular pores; 60 percent discontinuous distinct clay films; 10 percent boulders and 15 percent gravel; neutral, pH 6.7 by Hellige-Truog; clear smooth boundary.

Bt3—12 to 19 inches (30 to 48 cm); reddish brown (5YR 5/4) very gravelly clay loam, reddish brown (5YR 4/3) moist; 35 percent clay; moderate fine and medium subangular blocky structure; extremely hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; common very fine and fine irregular and tubular pores; 60 percent discontinuous distinct clay films; 10 percent boulders, 10 percent cobbles, and 15 percent gravel; neutral, pH 6.7 by Hellige-Truog; clear smooth boundary.

Bt4—19 to 24 inches (48 to 61 cm); brown (7.5YR 5/4) very gravelly clay, brown (7.5YR 4/4) moist; 40 percent clay; moderate fine and medium subangular blocky structure; extremely hard, firm, very sticky, very plastic; few very fine to coarse roots; few very fine and fine irregular and tubular pores; 90 percent continuous distinct clay films; 5 percent cobbles, 10 percent boulders, and 35 percent gravel; neutral, pH 6.7 by Hellige-Truog; abrupt smooth boundary.

R—24 inches (61 cm); indurated basalt bedrock.

Type location: Butte County, California; about 1.3 miles west of Richardson Springs, approximately 300 feet north and 850 feet east of the southwest corner of sec. 18, T. 23 N., R. 2 E.; 39 degrees, 50 minutes, 31 seconds north latitude and 121 degrees, 48 minutes, 10 seconds west longitude; NAD27; USGS Quad: Richardson Springs, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 67 degrees F (15 to 19 degrees C). The particle-size control section averages 27 to 35 percent clay and 35 to 60 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the bedrock and 10 inches (25 cm) below the surface of the soil from December through April. Redoximorphic features occur as soft oxidized iron masses in the A horizon, iron-manganese masses in the upper part of the Bt horizon, and iron-manganese masses and nodules in the lower part of the Bt horizon. Rock fragments on the surface range from 5 to 25 percent gravel, 5 to 15 percent cobbles, 5 to 15 percent stones, and 2 to 20 percent boulders.

The A horizon has dry color of 5YR 5/4 or 7.5YR 5/4. Moist color is 5YR 3/3 or 4/3 or 7.5YR 4/2. Texture is gravelly loam, very gravelly loam, or bouldery loam. The content of clay ranges from 20 to 27 percent. The horizon has 5 to 35 percent gravel, 0 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 20 percent boulders. Reaction ranges from moderately acid to neutral.

The upper part of the Bt horizon has dry color of 5YR 4/4, 5/4, or 5/6. Moist color is 5YR 4/3 or 4/4. Texture is gravelly loam, very gravelly loam, gravelly clay loam, or very gravelly clay loam. The content of clay ranges from 25 to 35 percent. The content of gravel is 15 to 30 percent, the content of cobbles is 0 to 15 percent, the content of stones is 0 to 15 percent, and the content of boulders is 0 to 10 percent. Reaction is slightly acid or neutral.

The lower part of the Bt horizon has dry color of 5YR 4/4 or 4/6 or 7.5YR 5/4. Moist color is 5YR 4/4, 7.5YR 4/4, or 2.5YR 3/4. Texture is very gravelly clay loam, very gravelly clay, or extremely stony clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 10 to 35 percent, the content of cobbles is 5 to 20 percent, the content of stones is 0 to 35 percent, and the content of boulders is 0 to 10 percent. Reaction is slightly acid or neutral.

Craigsaddle Series

The Craigsaddle series consists of deep, well drained soils that formed in residuum and colluvium derived from trondhjemite. These soils are on ridgetops and side slopes on granitic Sierra Nevada foothills. Slopes range from 2 to 70 percent. The mean annual precipitation is about 48 inches (1,219 mm), and the mean annual air temperature is about 58 degrees F (14 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Ultic Haploxeralfs

Typical Pedon

Craigsaddle coarse sandy loam, on a southwest-facing slope of 7 percent, under a cover of hardwoods, conifers, and shrubs, at an elevation of 980 feet (299 m). When described on 11/18/1998, the soil was slightly moist to a depth of 21 inches (53 cm) and dry from 21 to 80 inches (53 to 203 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 5 inches (0 to 13 cm); pale brown (10YR 6/3) coarse sandy loam, brown (10YR 4/3) moist; 6 percent clay; weak fine subangular blocky structure parting to single grain; loose, very friable, nonsticky, nonplastic; few fine and common very

fine roots; many very fine interstitial pores; 2 percent gravel; strongly acid, pH 5.5 by pH meter 1:1 water; abrupt smooth boundary.

Bw1—5 to 11 inches (13 to 28 cm); light gray (10YR 7/2) sandy loam, brown (10YR 4/3) moist; 10 percent clay; weak fine subangular blocky structure parting to single grain; loose, very friable, nonsticky, nonplastic; common fine and few very fine roots; many very fine interstitial pores; 2 percent gravel; strongly acid, pH 5.4 by pH meter 1:1 water; abrupt smooth boundary.

Bw2—11 to 17 inches (28 to 43 cm); pale brown (10YR 6/3) sandy loam, brown (7.5YR 5/4) moist; 10 percent clay; moderate fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common fine and coarse and many medium roots; common very fine and fine tubular pores; 5 percent gravel; strongly acid, pH 5.5 by pH meter 1:1 water; abrupt smooth boundary.

Bw3—17 to 21 inches (43 to 53 cm); very pale brown (10YR 7/3) sandy loam, brown (7.5YR 5/4) moist; 12 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; few fine and common medium and coarse roots; common very fine and fine tubular pores; 10 percent discontinuous faint clay films on faces of peds; 5 percent gravel; strongly acid, pH 5.5 by pH meter 1:1 water; clear smooth boundary.

Bt1—21 to 31 inches (53 to 79 cm); pink (7.5YR 7/4) sandy loam, brown (7.5YR 5/4) moist; 19 percent clay; moderate medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few fine and medium roots; many very fine tubular pores; 20 percent discontinuous distinct clay films on faces of peds and in pores; 5 percent gravel; moderately acid, pH 5.7 by pH meter 1:1 water; clear smooth boundary.

Bt2—31 to 51 inches (79 to 130 cm); reddish yellow (7.5YR 7/6) sandy loam, yellowish red (5YR 5/6) moist; 20 percent clay; strong medium subangular blocky structure; very hard, firm, slightly sticky, slightly plastic; few fine and medium roots; many very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds and in pores; 10 percent gravel; moderately acid, pH 5.8 by pH meter 1:1 water; clear smooth boundary.

BCt—51 to 58 inches (130 to 147 cm); pink (7.5YR 8/3) gravelly sandy loam, light brown (7.5YR 6/4) moist; 14 percent clay; moderate medium subangular blocky structure; hard, firm, nonsticky, slightly plastic; few fine roots; common very fine tubular pores; 20 percent discontinuous prominent clay films on faces of peds; 1 percent mica flakes; 25 percent gravel; moderately acid, pH 5.6 by pH meter 1:1 water; gradual wavy boundary.

Cdt—58 to 80 inches (147 to 203 cm); weathered, densic trondhjemite bedrock; pink (7.5YR 8/4) gravelly sandy loam, light brown (7.5YR 6/4) moist; 12 percent clay; massive; very hard, firm, nonsticky, nonplastic; few fine roots; few very fine tubular pores; 25 percent discontinuous prominent clay films on faces of peds; 5 percent mica flakes; 25 percent gravel; moderately acid, pH 5.9 by pH meter 1:1 water.

Type location: Butte County, California; about 2.5 miles east of Bidwell Bar Bridge, approximately 2,150 feet east and 2,000 feet north of the southwest corner of sec. 35, T. 20 N., R. 5 E.; 39 degrees, 32 minutes, 49 seconds north latitude and 121 degrees, 22 minutes, 58 seconds west longitude; NAD83; USGS Quad: Oroville Dam, California.

Range in Characteristics

The depth to densic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The particle-size control section averages 18 to 27 percent clay and 5 to 10 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 2.5 percent to a depth of 5 inches (13 cm) and is less than 1 percent from 5 to 80 inches (13 to 203 cm). By sum of cations, base saturation is less than 75 percent throughout the profile.

Rock fragments on the surface range from 0 to 10 percent gravel. Some pedons do not have a BCt horizon. Some have an O horizon at the surface.

The A horizon has dry color of 10YR 5/2, 6/2, or 6/3. Moist color is 10YR 3/2, 3/3, or 4/3. Texture is coarse sandy loam or sandy loam. The content of clay ranges from 5 to 10 percent. The content of fine gravel is 2 to 10 percent. Reaction ranges from strongly acid to slightly acid.

The Bw horizon has dry color of 10YR 6/2, 6/3, 7/2, or 7/3. Moist color is 10YR 4/2, 4/3, 5/3, or 5/4 or 7.5YR 5/4. Texture is sandy loam, coarse sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 8 to 12 percent. The content of gravel is 2 to 30 percent. Reaction ranges from strongly acid to slightly acid. This horizon is 9 to 32 inches (23 to 81 cm) thick.

The Bt horizon has dry color of 7.5YR 6/4, 6/6, 7/4, or 7/6; 5YR 6/4; or 10YR 7/4. Moist color is 7.5YR 4/6, 5/4, 5/6, or 6/4; 5YR 4/6 or 5/6; or 10YR 5/4. Texture is sandy loam, sandy clay loam, gravelly sandy loam, or gravelly sandy clay loam. The content of clay ranges from 15 to 27 percent. The content of gravel is 0 to 30 percent. Reaction ranges from strongly acid to slightly acid.

The BCt horizon has dry color of 7.5YR 7/4 or 8/3 or 5YR 6/6. Moist color is 7.5YR 5/6 or 6/4 or 2.5YR 4/8. Texture is gravelly sandy loam or sandy clay loam. The content of clay ranges from 13 to 25 percent. The content of gravel is 0 to 25 percent. Reaction ranges from very strongly acid to slightly acid.

The Cdt horizon has dry color of 7.5YR 6/4 or 8/4 or 10YR 7/4. Moist color is 7.5YR 5/4 or 6/4. Texture is gravelly sandy loam or very gravelly sandy clay loam. The content of clay ranges from 12 to 23 percent. The content of gravel is 20 to 50 percent. Reaction is strongly acid or moderately acid.

Crystalhill Series

The Crystalhill series consists of very deep, somewhat excessively drained soils that formed in residuum and colluvium derived from trondhjemite. These soils are on ridgetops and side slopes on granitic Sierra Nevada foothills. Slopes range from 2 to 70 percent. The mean annual precipitation is about 48 inches (1,219 mm), and the mean annual air temperature is about 58 degrees F (14 degrees C).

Taxonomic class: Coarse-loamy, mixed, active, thermic Typic Haploxerepts

Typical Pedon

Crystalhill gravelly coarse sandy loam, on a northwest-facing slope of 45 percent, under a cover of shrubs, hardwoods, and conifers, at an elevation of 1,740 feet (530 m). When described on 7/17/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); slightly decomposed plant material; abrupt smooth boundary.

A—2 to 7 inches (5 to 18 cm); light gray (10YR 7/2) gravelly coarse sandy loam, brown (10YR 5/3) moist; 5 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common fine roots; many very fine interstitial pores; 25 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bw1—7 to 14 inches (18 to 36 cm); pale brown (10YR 6/3) gravelly coarse sandy loam, brown (10YR 4/3) moist; 8 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common fine roots; common very fine interstitial pores; 20 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

Bw2—14 to 22 inches (36 to 56 cm); very pale brown (10YR 7/3) gravelly coarse sandy loam, brown (10YR 4/3) moist; 8 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; few fine roots; common very fine interstitial pores; 25 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; gradual smooth boundary.

Bw3—22 to 33 inches (56 to 84 cm); very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 4/3) moist; 10 percent clay; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; few fine roots; common very fine interstitial pores; 20 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; gradual smooth boundary.

Bw4—33 to 44 inches (84 to 112 cm); very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 4/3) moist; 8 percent clay; moderate medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; few fine roots; common very fine interstitial pores; 30 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; gradual smooth boundary.

BC—44 to 66 inches (112 to 168 cm); very pale brown (10YR 7/3) sandy loam, brown (10YR 5/3) moist; 5 percent clay; moderate medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; few fine roots; common very fine interstitial pores; 10 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.

Cdt—66 inches (168 cm); weathered, densic trondhjemite bedrock; 20 percent continuous prominent clay films in cracks.

Type location: Butte County, California; about 2.7 miles southwest of Featherfalls, approximately 600 feet west and 10 feet north of the southeast corner of sec. 27, T. 20 N., R. 6 E.; 39 degrees, 33 minutes, 24 seconds north latitude and 121 degrees, 16 minutes, 50 seconds west longitude; NAD83; USGS Quad: Forbestown, California.

Range in Characteristics

The depth to densic bedrock is 60 to 80 inches (152 to 203 cm) or more. The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The particle-size control section averages 8 to 18 percent clay and 20 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 2.5 percent to a depth of 7 inches (18 cm) and is less than 1 percent from 7 to 66 inches (18 to 168 cm). Rock fragments on the surface range from 0 to 10 percent gravel.

The A horizon has dry color of 10YR 5/2, 6/2, or 7/2 or 2.5Y 5/3. Moist color is 10YR 3/2, 4/2, 4/3, or 5/3. Texture is gravelly coarse sandy loam, gravelly sandy loam, coarse sandy loam, or sandy loam. The content of clay ranges from 5 to 8 percent. The content of gravel is 2 to 25 percent. Reaction ranges from very strongly acid to slightly acid.

The Bw horizon has dry color of 10YR 6/3, 6/4, 7/3, 7/4, or 8/3; 7.5YR 7/4; or 2.5Y 5/3 or 6/3. Moist color is 10YR 3/3, 4/2, 4/3, 4/4, 5/4, 5/6, or 6/4; 7.5YR 5/4; or 2.5Y 5/3 or 5/4. Texture is gravelly coarse sandy loam, gravelly sandy loam, coarse sandy loam, or sandy loam. The content of clay ranges from 5 to 12 percent. The content of gravel is 5 to 30 percent. Reaction ranges from strongly acid to slightly acid.

The BC horizon has dry color of 10YR 7/3, 7/4, 8/2, 8/3, or 8/4 or 2.5Y 7/3 or 7/4. Moist color is 10YR 5/3, 5/4, 6/3, or 7/4 or 2.5Y 6/4. Texture is sandy loam, gravelly loamy sand, very gravelly loamy coarse sand, loamy sand, coarse sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 1 to 14 percent. The content of gravel is 5 to 55 percent. Reaction ranges from strongly acid to slightly acid.

Dejonah Series

The Dejonah series consists of very deep, well drained soils that formed in tephra-influenced colluvium and residuum derived from metamorphic rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 78 inches (1,981 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Fine-loamy, mixed, active, frigid Andic Haplohumults

Typical Pedon

Dejonah gravelly loam, on a northeast-facing slope of 30 percent, under a cover of mixed conifers, red fir, and shrubs, at an elevation of 5,051 feet (1,540 m). When described on 7/14/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 2.5 cm); fresh needles and twigs.

A—1 to 4 inches (2.5 to 10 cm); brown (7.5YR 4/4) gravelly loam, dark reddish brown (5YR 3/3) moist; 14 percent clay; weak fine subangular blocky structure parting to single grain; loose, very friable, nonsticky, nonplastic; many very fine and fine and common coarse roots; many very fine irregular pores; 20 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.5; abrupt smooth boundary.

Bt1—4 to 10 inches (10 to 25 cm); brown (7.5YR 5/4) loam, dark reddish brown (5YR 3/4) moist; 18 percent clay; moderate medium subangular blocky structure; soft, friable, nonsticky, slightly plastic; common very fine to medium roots; few very fine tubular pores; few faint discontinuous clay films on faces of peds; 5 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.5; clear smooth boundary.

2Bt2—10 to 16 inches (25 to 41 cm); brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; 21 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and common medium roots; few very fine tubular pores; few faint discontinuous clay films on faces of peds; 5 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.5; clear smooth boundary.

2Bt3—16 to 28 inches (41 to 71 cm); light brown (7.5YR 6/4) loam, brown (7.5YR 4/4) moist; 22 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and coarse and common medium roots; common very fine and fine tubular pores; few faint discontinuous clay films on faces of peds and in pores; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.5; clear smooth boundary.

2Bt4—28 to 37 inches (71 to 94 cm); light brown (7.5YR 6/4) loam, brown (7.5YR 4/4) moist; 16 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and coarse and common medium roots; many very fine tubular pores; few faint discontinuous clay films on faces of peds and in pores; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.0; clear smooth boundary.

2BC1—37 to 53 inches (94 to 135 cm); light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; 12 percent clay; weak fine subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common fine to medium roots; many very fine and fine tubular pores; 30 percent paragravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.0; clear wavy boundary.

2BC2—53 to 60 inches (135 to 152 cm); light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; 14 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; few medium roots; many very fine and fine tubular pores; 50 percent paragravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.0.

Type location: Plumas County, California; about 1.6 miles northwest of Camel Peak Lookout, approximately 1,300 feet west and 2,400 feet north of the southeast corner of sec. 30, T. 22 N., R. 8 E.; 39 degrees, 44 minutes, 11.1 seconds north latitude and 121 degrees, 7 minutes, 24.5 seconds west longitude; NAD83; USGS Quad: American House, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The soil moisture control section is dry in all parts from about August to October (about 60 days). The particle-size control section averages 18 to 27 percent clay and 5 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 5 to 17 percent to a depth of 4 inches (10 cm), 2 to 10 percent from 4 to 16 inches (10 to 41 cm), 1 to 2 percent from 16 to 53 inches (41 to 135 cm), and less than 1 percent from 53 to 60 inches (135 to 152 cm). By sum of cations, base saturation ranges from 10 to 25 percent from 1 to 16 inches (2.5 to 41 cm) and is less than 10 percent from 16 to 60 inches (41 to 152 cm). Rock fragments on the surface range from 0 to 10 percent gravel and 0 to 10 percent cobbles. Some pedons have a C horizon.

The A horizon has dry color of 7.5YR 5/3, 5/4, 6/3, 6/4, or 7/4. Moist color is 7.5YR 3/2, 4/3, or 4/4 or 5YR 3/3, 3/4, 4/4, or 4/6. Texture is loam, sandy loam, gravelly loam, gravelly sandy loam, or very gravelly sandy loam. The content of clay ranges from 10 to 18 percent. The horizon has 5 to 40 percent gravel and 0 to 5 percent cobbles. Acid oxalate extractable Al plus ½ Fe ranges from 1.4 to 2.0. P retention ranges from 80 to 85. The content of glass ranges from 5 to 10 percent. NaF pH is 10.0 to 11.5. Reaction ranges from slightly acid to strongly acid.

The Bt1 horizon has dry color of 7.5YR 5/3, 5/4, 6/3, 6/4, 6/6, or 7/6. Moist color is 7.5YR 4/3, 5/4, or 5/6 or 5YR 3/4, 4/3, 4/6, 5/4, or 5/6. Texture is gravelly loam, gravelly sandy loam, or loam. The content of clay ranges from 18 to 25 percent. The horizon has 5 to 20 percent gravel and 0 to 5 percent cobbles. Acid oxalate extractable Al plus ½ Fe ranges from 1.0 to 1.8. P retention ranges from 65 to 85. The content of glass ranges from 2 to 10 percent. NaF pH is 9.5 to 10.5. Reaction ranges from slightly acid to very strongly acid.

The 2Bt horizon has dry color of 7.5YR 5/4, 6/4, 7/4, or 7/6 or 10YR 7/4, 7/6, 8/4, or 8/6. Moist color is 7.5YR 4/4, 5/4, 5/6, or 6/6 or 10YR 4/4, 5/4, 5/6, or 6/6. Texture is loam, gravelly loam, very gravelly loam, gravelly sandy clay loam, or very gravelly sandy clay loam. The content of clay ranges from 15 to 27 percent. The horizon has 0 to 30 percent gravel, 0 to 15 percent cobbles, and 0 to 30 percent paragravel. NaF pH is 9.0 to 10.0. Reaction ranges from slightly acid to very strongly acid.

The 2BC horizon has dry color of 10YR 6/4, 7/6, or 8/6. Moist color is 10YR 4/4 or 6/6 or 7.5YR 6/6 or 6/8. Texture is loam, sandy loam, gravelly loam, or extremely gravelly sandy loam. The content of clay ranges from 8 to 20 percent. The horizon has 0 to 80 percent gravel, 0 to 20 percent cobbles, and 0 to 50 percent paragravel. NaF pH is less than 9.0. Reaction ranges from moderately acid to very strongly acid.

Dixmine Series

The Dixmine series consists of deep, well drained soils that formed in residuum and colluvium derived from metavolcanic rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 71 inches (1,803 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Clayey-skeletal, parasesquic, mesic Typic Haploxerults

Typical Pedon

Dixmine very gravelly loam, on a west-southwest-facing slope of 36 percent, under a cover of Douglas-fir, ponderosa pine, sugar pine, white fir, California black oak, and tanoak, at an elevation of 2,970 feet (905 m). When described on 10/15/1997, the soil was dry to a depth of 17.5 inches (44 cm) and very slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); needles, leaves, and twigs.
Oe—1 to 2 inches (3 to 4 cm); partially decomposed needles, leaves, and twigs.
A—2 to 6 inches (4 to 14 cm); reddish yellow (7.5YR 6/6) very gravelly loam, brown (7.5YR 4/4) moist; 24 percent clay; strong fine granular structure; soft, friable, slightly sticky, slightly plastic; many very fine and common fine and medium roots; many very fine to medium and common coarse irregular and tubular pores; noneffervescent; 35 percent gravel; slightly acid, pH 6.2 by pH meter 1:1 water; clear smooth boundary.
Bt1—6 to 11 inches (14 to 29 cm); reddish yellow (7.5YR 6/6) very gravelly loam, brown (7.5YR 4/4) moist; 24 percent clay; strong fine and medium granular structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium and common coarse irregular and tubular pores; many distinct discontinuous clay films on faces of peds; noneffervescent; 30 percent gravel and 5 percent cobbles; moderately acid, pH 5.9 by pH meter 1:1 water; gradual smooth boundary.
Bt2—11 to 17 inches (29 to 44 cm); reddish yellow (5YR 6/6) gravelly loam, reddish brown (5YR 4/4) moist; 23 percent clay; strong fine and medium granular structure; soft, friable, slightly sticky, slightly plastic; common very fine to medium and few coarse roots; many very fine to medium and common coarse irregular and tubular pores; many distinct discontinuous clay films on faces of peds; noneffervescent; 20 percent gravel and 10 percent cobbles; moderately acid, pH 5.8 by pH meter 1:1 water; clear smooth boundary.
Bt3—17 to 30 inches (44 to 75 cm); reddish yellow (5YR 6/6) very cobbly clay loam, yellowish red (5YR 4/6) moist; 35 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine and fine and common medium tubular pores; many distinct continuous clay films on faces of peds; noneffervescent; 20 percent gravel and 25 percent cobbles; strongly acid, pH 5.5 by pH meter 1:1 water; gradual smooth boundary.
Bt4—30 to 41 inches (75 to 103 cm); reddish yellow (5YR 6/6) very gravelly clay loam, yellowish red (5YR 4/6) moist; 35 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; many prominent continuous clay films on faces of peds; noneffervescent; 30 percent gravel and 25 percent cobbles; strongly acid, pH 5.4 by pH meter 1:1 water; gradual smooth boundary.
Bt5—41 to 54 inches (103 to 136 cm); reddish yellow (5YR 6/6) extremely cobbly clay loam, yellowish red (5YR 4/6) moist; 28 percent clay; moderate medium subangular blocky structure; soft, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; many distinct continuous clay films on faces of peds; noneffervescent; 30 percent gravel and 35 percent cobbles; strongly acid, pH 5.3 by pH meter 1:1 water; abrupt wavy boundary.
Cr—54 inches (136 cm); very weathered, moderately cemented metatuff; beds occurring less than 4 inches (10 cm) apart; roots occurring more than 4 inches (10 cm) apart.

Type location: Butte County, California; about 2.1 miles north-northeast of Platte Mountain, approximately 1,500 feet north and 1,500 feet east of the southwest corner of sec. 3, T. 24 N., R. 3 E.; 39 degrees, 57 minutes, 49.77 seconds north latitude and 121 degrees, 37 minutes, 52.52 seconds west longitude; NAD83; USGS Quad: Cohasset, California

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 (102 to 152 cm) inches. The mean annual soil temperature is 50 to 57 degrees F (10 to 14 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 35 to 40 percent clay and 35 to 60 percent rock fragments, mostly gravel. Mineralogy is parasesquic. Rock fragments on the surface range from 5 to 25 percent gravel, 0 to 10 percent cobbles, and 0 to 10 percent stones.

The A horizon has dry color of 7.5YR 5/4, 6/4, 6/6, or 7/4. Moist color is 7.5YR 3/4 or 4/4 or 5YR 4/3. Texture is very gravelly loam or gravelly loam. The content of clay ranges from 18 to 27 percent. The horizon has 15 to 50 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 4 to 8 percent. Reaction is moderately acid or slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 5/4, 6/4, 6/6, or 7/6 or 5YR 5/6, 6/4, or 6/6. Moist color is 7.5YR 3/4, 4/4, 4/6, 5/4, or 5/6 or 5YR 4/3, 4/4, or 4/6. Texture is gravelly loam, very gravelly loam, or gravelly clay loam. The content of clay ranges from 20 to 30 percent. The content of gravel is 15 to 35 percent, and the content of cobbles is 0 to 20 percent. The content of organic matter is 2 to 5 percent. Reaction ranges from strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 7.5YR 5/4, 6/6, or 7/6; 5YR 5/6 or 6/6; or 2.5YR 5/6 or 7/6. Moist color is 7.5YR 5/4, 5/6, or 6/6; 5YR 4/6 or 5/6; or 2.5YR 3/4 or 4/6. Texture is very gravelly clay loam, very cobbly clay loam, or extremely cobbly clay loam. The content of clay ranges from 27 to 40 percent. The content of gravel is 15 to 60 percent, and the content of cobbles is 0 to 35 percent. The content of organic matter is 0.2 to 2 percent. Reaction ranges from very strongly acid to moderately acid.

Dodgeland Series

The Dodgeland series consists of very deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in overflow channels and flood basins. Slopes range from 0 to 5 percent. The mean annual precipitation is about 19 inches (483 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Endoaquerts

Typical Pedon

Dodgeland silty clay loam, on a slope of 1 percent, under a cover of rice stubble, at an elevation of 105 feet (32 m). When described on 9/13/1994, the soil was slightly moist below a depth of 8 inches (20 cm) and moist from 8 to 53 inches (20 to 135 cm). The water table was at a depth of 120 inches (305 cm). (Colors are for dry soil unless otherwise noted).

Ap1—0 to 4 inches (0 to 10 cm); light brownish gray (10YR 6/2) silty clay loam, dark gray (10YR 4/1) moist; 39 percent clay; moderate medium subangular blocky structure parting to moderate fine granular; slightly hard, very friable, moderately sticky, moderately plastic; many fine and common very fine roots; common fine irregular and common very fine tubular pores; common fine prominent strong brown (7.5YR 4/6 moist) irregular oxidized iron masses lining pores; common fine

prominent black (N 2/0 moist) irregularly shaped iron-manganese masses between peds; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Ap2—4 to 8 inches (10 to 20 cm); gray (10YR 5/1) silty clay, very dark grayish brown (10YR 3/2) moist; 41 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine and fine and few coarse roots; few very fine tubular pores; many medium prominent strong brown (7.5YR 4/6 moist) irregular oxidized iron masses throughout; common fine prominent black (N 2/0 moist) irregular iron-manganese masses between peds; 1 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bss1—8 to 18 inches (20 to 46 cm); grayish brown (10YR 5/2) silty clay, dark grayish brown (10YR 4/2) moist; 49 percent clay; weak medium prismatic structure parting to moderate fine angular blocky; extremely hard, extremely firm, very sticky, very plastic; few very fine and fine roots; few very fine tubular pores; common fine prominent brown (7.5YR 4/4 moist) irregular oxidized iron masses throughout; common fine prominent black (N 2/0 moist) irregular iron-manganese masses throughout; common fine prominent light brownish gray (10YR 6/2) irregular iron depletions throughout; few slickensides; 1 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bss2—18 to 33 inches (46 to 84 cm); brown (10YR 5/3) silty clay, dark grayish brown (10YR 4/2) moist; 51 percent clay; weak coarse prismatic structure parting to moderate fine angular blocky; extremely hard, extremely firm, very sticky, very plastic; few very fine and fine roots; few very fine tubular pores; common fine prominent brown (7.5YR 4/4 moist) irregular oxidized iron masses throughout; common fine prominent black (N 2/0 moist) irregular iron-manganese masses throughout; common fine prominent light brownish gray (10YR 6/2 moist) irregular iron depletions lining pores; common slickensides; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bss3—33 to 45 inches (84 to 114 cm); brown (10YR 5/3) silty clay, brown (10YR 4/3) moist; 49 percent clay; moderate medium angular blocky structure; very hard, very firm, moderately sticky, moderately plastic; few very fine roots; few very fine tubular pores; common fine prominent brown (7.5YR 4/4 moist) irregular oxidized iron masses of throughout; few fine prominent black (N 2/0 moist) iron-manganese masses throughout; common fine prominent light brownish gray (10YR 6/2 moist) irregular iron depletions lining pores; common slickensides; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bkss—45 to 53 inches (114 to 135 cm); light yellowish brown (10YR 6/4) silty clay, brown (10YR 4/3) moist; 41 percent clay; moderate fine angular blocky structure; very hard, very firm, moderately sticky, moderately plastic; few very fine roots; common very fine tubular pores; common fine prominent light brownish gray (10YR 6/2 moist) threadlike iron depletions lining pores; few slickensides; common fine distinct white (10YR 8/2) carbonate concretions between peds and common fine distinct white (10YR 8/2) carbonate threads on faces of peds and in pores; violently effervescent; slightly alkaline, pH 7.5 by Hellige-Truog; abrupt smooth boundary.

2Bw1—53 to 60 inches (135 to 152 cm); light yellowish brown (10YR 6/4) silty clay loam, brown (10YR 4/3) moist; 33 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; few fine and common very fine tubular pores; common fine and medium prominent light brownish gray (10YR 6/2 moist) threadlike iron depletions lining pores; slightly alkaline, pH 7.8 by Hellige-Truog; clear smooth boundary.

2Bw2—60 to 70 inches (152 to 178 cm); very pale brown (10YR 7/4) silty clay loam, dark yellowish brown (10YR 4/4) moist; 29 percent clay; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky, slightly plastic;

few very fine roots; common fine tubular pores; common fine and medium prominent light brownish gray (10YR 6/2 moist) threadlike iron depletions lining pores; slightly alkaline, pH 7.8 by Hellige-Truog; gradual smooth boundary.

2Bw3—70 to 80 inches (178 to 203 cm); very pale brown (10YR 7/4) silty clay loam, dark yellowish brown (10YR 4/4) moist; 33 percent clay; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky, slightly plastic; few very fine roots; common very fine and few fine tubular pores; common fine distinct black (N 2/0 moist) irregular manganese masses throughout; slightly alkaline, pH 7.8 by Hellige-Truog.

Type location: Butte County, California; about 5.8 miles southwest of Dayton, approximately 14,620 feet north and 2,050 feet west of the northwest corner of sec. 1, T. 19 N., R. 1 W.; in an unsectionized area in the Llano Seco Land Grant; 39 degrees, 34 minutes, 7 seconds north latitude and 121 degrees, 56 minutes, 12 seconds west longitude; NAD27; USGS Quad: Llano Seco, California.

Range in Characteristics

Depth to the duripan is more than 80 inches (203 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from May to October 15 (about 165 days). The particle-size control section averages 40 to 60 percent clay. Mineralogy is dominantly smectitic. The content of organic matter is 1 to 2 percent to a depth of 45 inches (114 cm). Reversible, surface-initiated cracks 0.25 to 1 inch wide extend to a depth of 33 inches (84 cm) from June 15 to October 1 (about 105 days) when the soils are not irrigated. Few or common intersecting slickensides occur in the Bss and Bkss horizons, from 8 to 53 inches (20 to 135 cm). A fluctuating water table can occur at a depth of 0 to 60 inches (0 to 152 cm) from December through April. Some pedons have thin strata of sandy loam between the Ap and Bss horizons.

The Ap1 horizon has dry color of 10YR 5/1, 5/2, 6/2, or 6/3. Moist color is 10YR 3/2, 3/3, 4/1, or 4/2. The content of clay ranges from 30 to 40 percent. The content of gravel is 0 to 5 percent. Redoximorphic features occur as oxidized iron masses and iron-manganese masses. Reaction is slightly acid or moderately acid because of applications of fertilizer.

The Ap2 horizon has dry color of 10YR 5/1, 5/2, or 5/3. Moist color is 10YR 3/2, 4/2, or 4/3. Texture is silty clay or clay. The content of clay ranges from 40 to 45 percent. The content of gravel is 0 to 5 percent. Redoximorphic features occur as oxidized iron masses, iron-manganese masses, manganese nodules, and iron depletions. Reaction is slightly acid or neutral.

The Bss horizon has dry color of 10YR 5/2, 5/3, or 6/3. Moist color is 10YR 4/2, 4/3, or 4/4. Texture is silty clay or clay. The content of clay ranges from 45 to 55 percent. The content of gravel is 0 to 5 percent. Redoximorphic features occur as oxidized iron masses, iron-manganese masses, manganese nodules, and iron depletions. Reaction is neutral or slightly alkaline.

The Bkss horizon has dry color of 10YR 6/3, 6/4, 5/3, 4/3, or 4/2. Moist color is 10YR 3/3, 3/4, or 4/3. Texture is silty clay or clay. The content of clay ranges from 40 to 55 percent. Redoximorphic features occur as iron-manganese masses and iron depletions. Electrical conductivity ranges from 0 to 2 mmhos/cm. The content of calcium carbonate is 0 to 1 percent. Reaction is slightly alkaline or moderately alkaline.

The 2Bw horizon has dry color of 10YR 6/4 or 7/4. Moist color is 4/3 or 4/4. Texture is silty clay loam or silt loam. The content of clay ranges from 18 to 35 percent. Redoximorphic features occur as iron-manganese masses and iron depletions. Reaction is slightly alkaline or moderately alkaline.

Doemill Series

The Doemill series consists of shallow, somewhat poorly drained soils that formed in residuum derived from volcanic mudflow breccia. These soils are on mounds and in convex areas on ridgetops and side slopes on volcanic ridges on Cascade foothills. Slopes range from 0 to 30 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy, mixed, superactive, thermic Lithic Haploxeralfs

Typical Pedon

Doemill gravelly loam, on a west-facing slope of 3 percent, under a cover of annual grasses and forbs, at an elevation of 319 feet (97 m). When described on 3/26/1997, the soil was dry from 0 to 1 inch (0 to 2.5 cm) and slightly moist from 1 to 14 inches (2.5 to 36 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 2.5 cm); strong brown (7.5YR 5/6) gravelly loam, dark reddish brown (2.5YR 3/4) moist; 19 percent clay; moderate thin and medium platy structure parting to moderate fine subangular blocky; slightly hard, friable, nonsticky, slightly plastic; many very fine and few fine roots; few very fine tubular and common very fine irregular pores; noneffervescent; 15 percent gravel; slightly acid, pH 6.1 by pH meter 1:1 water; clear smooth boundary.

Bt1—1 to 5 inches (2.5 to 13 cm); yellowish red (5YR 5/6) gravelly loam, dark reddish brown (2.5YR 3/4) moist; 23 percent clay; moderate medium subangular blocky structure; moderately hard, firm, slightly sticky, slightly plastic; common very fine and few fine roots; common very fine vesicular and tubular pores; common distinct discontinuous clay films on faces of peds; noneffervescent; 20 percent gravel; neutral, pH 6.8 by pH meter 1:1 water; gradual smooth boundary.

Bt2—5 to 9 inches (13 to 23 cm); yellowish red (5YR 5/6) gravelly loam, dark reddish brown (2.5YR 3/4) moist; 24 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and few fine roots; common very fine and few fine vesicular and tubular pores; common distinct discontinuous clay films on faces of peds; noneffervescent; 15 percent gravel; neutral, pH 6.7 by pH meter 1:1 water; gradual smooth boundary.

Bt3—9 to 14 inches (23 to 36 cm); yellowish red (5YR 5/6) gravelly loam, dark reddish brown (2.5YR 3/4) moist; 26 percent clay; moderate medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine and common fine vesicular and tubular pores; common distinct discontinuous clay films on faces of peds; noneffervescent; 20 percent gravel and 10 percent cobbles; neutral, pH 6.7 by pH meter 1:1 water; abrupt smooth boundary.

R—14 inches (36 cm); indurated volcanic mudflow breccia; matted roots on the surface of the bedrock; 1/16-inch (2-mm) manganese capping.

Type location: Butte County, California; about 0.7 mile north of Rock Creek Road and about 2.8 miles east of Meridian Road, approximately 1,600 feet south and 750 feet west of the northeast corner of sec. 16, T. 23 N., R. 1 E.; 39 degrees, 51 minutes, 3.57 seconds north latitude and 121 degrees, 51 minutes, 54.65 seconds west longitude; NAD83; USGS Quad: Richardson Springs, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 200 days). The particle-size control section averages 18 to 27 percent clay and 2 to 35 percent rock

fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the bedrock and 2 inches (5 cm) below the surface of the soil from November through March. Redoximorphic features, such as iron-manganese masses, occur in the Bt horizon. Also, manganese accumulations occur in layers 1/16 to 1/8 inch thick on top of the bedrock. Rock fragments on the surface range from 0 to 20 percent gravel, 2 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 5 percent boulders. Some pedons have an organic mat, 1/16 inch (2 mm) thick, on the surface.

The A horizon has dry color of 5YR 4/6 or 5/6 or 7.5YR 5/6. Moist color is 2.5YR 3/4; 5YR 3/3, 3/4, 4/3, or 4/4; or 7.5YR 3/3. Texture is loam or gravelly loam. The content of clay ranges from 15 to 24 percent. The horizon has 1 to 15 percent gravel, 0 to 10 percent cobbles, and 0 to 10 percent stones. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 5YR 5/6 or 7.5YR 5/6. Moist color is 2.5YR 3/3 or 3/4 or 5YR 3/3, 3/4, or 4/4. Texture is loam, gravelly loam, cobbly loam, gravelly clay loam, or very gravelly clay loam. The content of clay ranges from 18 to 30 percent. The horizon has 2 to 20 percent gravel, 0 to 20 percent cobbles, and 0 to 10 percent stones. Reaction is slightly acid or neutral.

Dunstone Series

The Dunstone series consists of shallow, well drained soils that formed in residuum and colluvium derived from metavolcanic rocks, mainly greenschist and metasedimentary rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada foothills. Slopes range from 1 to 90 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy, mixed, superactive, thermic, shallow Ultic Haploxeralfs

Typical Pedon

Dunstone loam, on a west-facing slope of 6 percent, under a cover of annual grasses and forbs, at an elevation of 725 feet (223 m). When described on 7/12/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/4) loam, dark brown (7.5YR 3/4) moist; 15 percent clay; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; many very fine roots; common very fine tubular pores; 20 percent fine irregular yellowish red (5YR 5/6) oxidized iron masses throughout; 2 percent subangular metavolcanic gravel; very strongly acid, pH 5.0 by Hellige-Truog; abrupt smooth boundary.

BAt—2 to 7 inches (5 to 18 cm); strong brown (7.5YR 5/6) loam, yellowish red (5YR 4/6) moist; 17 percent clay; moderate fine subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; 5 percent discontinuous faint clay films on faces of peds and in pores; 3 percent subangular metavolcanic gravel; slightly acid, pH 6.6 by Hellige-Truog; clear wavy boundary.

Bt1—7 to 10 inches (18 to 25 cm); strong brown (7.5YR 5/6) loam, yellowish red (5YR 4/6) moist; 22 percent clay; moderate fine subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; 10 percent discontinuous faint clay films on faces of peds and in pores; 3 percent subangular metavolcanic gravel; neutral, pH 6.7 by Hellige-Truog; clear wavy boundary.

Bt2—10 to 16 inches (25 to 41 cm); strong brown (7.5YR 5/6) loam, yellowish red (5YR 4/6) moist; 24 percent clay; moderate medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; common very fine

roots; many very fine and fine tubular pores; 10 percent discontinuous faint clay films on faces of peds and in pores; 5 percent subangular metavolcanic gravel; neutral, pH 6.8 by Hellige-Truog; clear wavy boundary.

Cr—16 to 20 inches (41 to 51 cm); moderately cemented, weathered greenschist.

Type location: Butte County, California; about 1.5 miles north of Wyandotte, approximately 2,500 feet south and 1,950 feet east of the northwest corner of sec. 30, T. 19 N., R. 5 E.; 39 degrees, 28 minutes, 33.42 seconds north latitude and 121 degrees, 27 minutes, 20.99 seconds west longitude: NAD83; USGS Quad: Bangor, California.

Range in Characteristics

The depth to paralithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 150 days). The particle-size control section averages 18 to 27 percent clay and 3 to 30 percent rock fragments, mostly gravel. The content of silt can be as high as 50 percent. Mineralogy is mixed. Rock fragments on the surface range from 0 to 5 percent cobbles, 0 to 2 percent stones, and 0 to 1 percent boulders. Some pedons have a BCt horizon.

The A horizon has dry color of 7.5YR 4/4, 4/6, 5/4, 5/6, 6/4, or 6/6 or 5YR 4/4 or 4/6. Moist color is 7.5YR 3/3, 3/4, 4/3, or 4/4 or 5YR 3/3, 3/4, or 4/4. Texture is loam, silt loam, gravelly silt loam, or gravelly loam. The content of clay ranges from 12 to 22 percent. The horizon has 0 to 30 percent gravel and 0 to 5 percent cobbles. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 1 to 8 percent. Reaction ranges from very strongly acid to slightly acid.

The BAt horizon has dry color of 7.5YR 5/4 or 5/6 or 5YR 4/6. Moist color is 7.5YR 4/3 or 3/4 or 5YR 3/3, 3/4, 3/6, 4/4, or 4/6. Texture is loam or gravelly loam. The content of clay ranges from 16 to 22 percent. The horizon has 3 to 30 percent gravel and 0 to 5 percent cobbles. By sum of cations, base saturation ranges from 65 to 74 percent. The content of organic matter is 1 to 2 percent. Reaction ranges from moderately acid to neutral.

The upper part of the Bt horizon has dry color of 7.5YR 4/6, 5/4, 5/6, 6/4, or 6/6 or 5YR 4/6 or 5/6. Moist color is 7.5YR 3/4 or 4/4 or 5YR 3/4, 3/6, or 4/4. Texture is loam, gravelly loam, silt loam, gravelly silt loam, clay loam, or gravelly clay loam. The content of clay ranges from 15 to 27 percent. The content of gravel is 0 to 30 percent, and the content of cobbles is 0 to 5 percent. By sum of cations, base saturation ranges from 65 to 75 percent. The content of organic matter is 0.5 to 2 percent. Reaction ranges from moderately acid to neutral.

The lower part of the Bt horizon has dry color of 7.5YR 4/6, 5/6, or 6/6; 5YR 4/6 or 5/6; or 2.5YR 5/6. Moist color is 7.5YR 4/6, 5YR 3/4 or 4/4, or 2.5YR 3/6. Texture is loam, silt loam, gravelly loam, very gravelly loam, clay loam, gravelly clay loam, or very gravelly clay loam. The content of clay ranges from 18 to 35 percent. The content of gravel is 0 to 45 percent, and the content of cobbles is 0 to 5 percent. By sum of cations, base saturation ranges from 74 to 85 percent. The content of organic matter is 0.5 to 2 percent. Reaction ranges from moderately acid to neutral.

Duraquerts

Duraquerts consist of moderately deep, poorly drained soils that formed in alluvium derived from igneous rocks. These soils are in swales on fan terraces. Slopes are 0 to 1 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Duraquerts

Typical Pedon

Duraquerts gravelly clay, on a slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 194 feet (59 m). When described on 4/25/2001, the soil was slightly moist from the surface to 3 inches (0 to 8 cm) and moist from 3 to 23 inches (8 to 58 cm). (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches (0 to 8 cm); very dark gray (10YR 3/1) gravelly clay, very dark grayish brown (10YR 3/2) moist; 45 percent clay; moderate medium subangular blocky structure parting to moderate very fine granular; very hard, very firm, very sticky, very plastic; many very fine roots; common fine irregular pores; 15 percent oxidized iron masses on surfaces along root channels; 2 percent well rounded mixed cobbles and 20 percent well rounded mixed gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

A2—3 to 6 inches (8 to 15 cm); dark gray (10YR 4/1) gravelly silty clay, very dark gray (10YR 3/1) moist; 50 percent clay; moderate medium subangular blocky structure parting to moderate very fine granular; extremely hard, extremely firm, very sticky, very plastic; few fine and common very fine roots; few very fine tubular pores; oxidized iron masses; 20 percent well rounded mixed gravel; slightly acid, pH 6.3 by Hellige-Truog; abrupt smooth boundary.

Bss1—6 to 15 inches (15 to 38 cm); dark gray (10YR 4/1) silty clay, dark grayish brown (10YR 4/2) moist; 55 percent clay; moderate coarse prismatic structure parting to moderate fine angular blocky; extremely hard, extremely firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; 20 percent slickensides; 10 percent well rounded mixed gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bss2—15 to 21 inches (38 to 53 cm); dark gray (10YR 4/1) silty clay, dark grayish brown (10YR 4/2) moist; 55 percent clay; weak medium angular blocky structure; extremely hard, extremely firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; 10 percent slickensides; 10 percent well rounded mixed gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

Bw—21 to 23 inches (53 to 58 cm); brown (10YR 5/3) very gravelly silty clay, brown (10YR 4/3) moist; 55 percent clay; weak fine angular blocky structure; extremely hard, extremely firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; 40 percent very fine irregular manganese masses around rock fragments; 50 percent well rounded mixed gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

2Bq1—23 to 27 inches (58 to 69 cm); weakly cemented duripan; yellow (10YR 7/6) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; 10 percent clay; massive; weakly cemented by silica; 50 percent well rounded mixed gravel; abrupt smooth boundary.

2Bq2—27 to 32 inches (69 to 81 cm); extremely weakly cemented duripan; yellow (10YR 7/6) extremely gravelly sandy loam, dark yellowish brown (10YR 4/6) moist; 10 percent clay; massive; extremely weakly cemented by silica; 65 percent well rounded mixed gravel; abrupt smooth boundary.

2Bq3—32 to 39 inches (81 to 99 cm); very weakly cemented duripan; yellow (10YR 7/6) extremely gravelly sandy loam, dark yellowish brown (10YR 4/6) moist; 10 percent clay; massive; very weakly cemented by silica; 10 percent well rounded mixed cobbles and 60 percent well rounded mixed gravel; abrupt smooth boundary.

2Bq4—39 to 60 inches (99 to 152 cm); very weakly cemented duripan; yellow (10YR 7/6) extremely gravelly sandy loam, dark yellowish brown (10YR 4/6) moist; 10 percent clay; massive; very weakly cemented by silica; 10 percent well rounded mixed cobbles and 60 percent well rounded mixed gravel.

Type location: Butte County, California; about 4.5 miles northwest of Oroville, approximately 1,500 feet east and 500 feet north of the southwest corner of sec. 27,

T. 20 N., R. 3 E.; 39 degrees, 33 minutes, 15 seconds north latitude and 121 degrees, 37 minutes, 40 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 50 to 55 percent clay and 10 to 20 percent rock fragments, mostly gravel. Mineralogy is smectitic. The content of organic matter is 1 to 2 percent in the A horizon and less than 1 percent in the Bss and Bw horizons. Reversible, surface-initiated cracks 1 to 1.5 inches (3 to 4 cm) wide extend to a depth of 21 inches (53 cm) from May to October. Slickensides range from 10 to 20 percent in the Bss horizon, from 6 to 21 inches (15 to 53 cm). A fluctuating water table can occur between the top of the duripan and the surface of the soil from December through May. Rock fragments on the surface range from 0 to 10 percent gravel and 2 to 25 percent cobbles.

The A horizon has dry color of 10YR 3/1, 4/1, or 5/2. Moist color is 10YR 3/1, 3/2, or 4/2. Texture is gravelly clay, gravelly silty clay, or clay. The content of clay ranges from 40 to 50 percent. The horizon has 5 to 20 percent gravel and 0 to 2 percent cobbles. Redoximorphic features range from 15 to 20 percent oxidized iron masses. Reaction is moderately acid or slightly acid.

The Bss horizon has dry color of 10YR 4/1 or 5/2. Moist color is 10YR 4/1 or 4/2. Texture is silty clay or clay. The content of clay ranges from 45 to 55 percent. The horizon has 5 to 10 percent gravel and 0 to 2 percent cobbles. Redoximorphic features range from 0 to 2 percent iron-manganese nodules, 0 to 10 percent oxidized iron masses, and 10 to 35 percent iron-manganese masses. Reaction ranges from slightly acid to moderately alkaline.

The Bw horizon has dry color of 10YR 5/3, 6/3, or 6/4. Moist color is 10YR 4/3, 4/4, or 5/4. Texture is very gravelly silty clay or gravelly clay. The content of clay ranges from 50 to 55 percent. The horizon has 20 to 50 percent gravel and 0 to 10 percent cobbles. Redoximorphic features range from 0 to 2 percent iron-manganese masses and 0 to 2 percent iron-manganese nodules. Reaction ranges from neutral to moderately alkaline.

The 2Bq horizon has dry color of 10YR 7/6. Moist color is 10YR 4/3 or 5/4. Texture is very gravelly or extremely gravelly sandy loam. The content of clay ranges from 5 to 10 percent. The horizon has 50 to 65 percent gravel and 0 to 10 percent cobbles. Redoximorphic features range from 2 to 5 percent manganese surface coatings on top of the horizon. Reaction ranges from neutral to moderately alkaline. Cementation ranges from extremely weak to weak.

Duric Xerarents

Duric Xerarents consist of shallow to deep, moderately well drained to poorly drained, anthropogenic (altered) soils that formed during the process of land-leveling. The cut and fill material (human-altered and human-transported material) is reworked alluvium weathered from igneous and metamorphic rocks. These soils are on anthropogenic-altered intermediate and low terraces. Slopes are 0 to 1 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Thermic Duric Xerarents

Reference Pedon

Duric Xerarents fine sandy loam, on a slope of less than 1 percent, in a fallowed field, under a cover of annual grasses and forbs, at an elevation of 135 feet (41 m). When

described on 5/28/1992, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Ap—0 to 5 inches (0 to 13 cm); brownish yellow (10YR 6/6) fine sandy loam, dark yellowish brown (10YR 4/4) moist; 18 percent clay; moderate very fine and fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; many very fine roots; few very fine tubular pores; 10 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

C/Bt/Bqm—5 to 12 inches (13 to 30 cm); brownish yellow (10YR 6/6) and reddish yellow (7.5YR 6/6) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; 12 percent clay; moderate fine angular blocky structure; very hard, firm, nonsticky, nonplastic; brittle; common very fine roots; 5 percent clay films on faces of peds; 50 percent gravel; up to 20 percent duripan fragments; neutral, pH 7.0 by Hellige-Truog; abrupt irregular boundary.

2Bqmb—12 to 19 inches (30 to 46 cm); indurated duripan; yellowish brown (5YR 5/6), cemented extremely gravelly material, dark reddish brown (5YR 3/4) moist; extremely hard, brittle; few very fine roots; 20 percent manganese coatings; 80 percent gravel; slightly alkaline, pH 7.7 by Hellige-Truog.

The reference pedon is an example of the soils within this category. It is not necessarily representative of the soils throughout the survey area. The texture, color, content of rock fragments, and thickness of layers vary considerably from one area to another.

Type location: Butte County, California; about 5.3 miles northwest of Oroville, approximately 2,100 feet north and 1,100 feet east of the southwest corner of sec. 5, T. 19 N., R. 3 E.; 39 degrees, 31 minutes, 47 seconds north latitude and 121 degrees, 39 minutes, 55 seconds west longitude; NAD27; USGS Quad: Shippee, California.

Range in Characteristics

In cut areas depth to the duripan ranges from 4 to 22 inches (15 to 56 cm), and in fill areas it ranges from 24 to 80 inches (61 to 203 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 12 to 50 percent clay and 10 to 50 percent rock fragments, mostly gravel. Mineralogy is mixed or smectitic. Texture varies because of cutting and filling. The content of organic matter is 0 to 2 percent to a depth of 80 inches (203 cm). A fluctuating water table can occur between the surface of the soil and a depth of 80 inches (0 to 203 cm) from December through April. Redoximorphic features, such as manganese coatings and oxidized iron masses, may occur in all horizons. Rock fragments on the surface range from 0 to 10 percent gravel.

The Ap or Ab horizon has dry color of 10YR 5/2, 5/3, 6/3, 6/4, or 6/6. Moist color is 10YR 3/1, 3/2, 3/3, 3/4, 4/2, 4/3, or 4/4 or 7.5YR 4/6. Texture is fine sandy loam, gravelly sandy loam, clay loam, sandy clay loam, sandy loam, clay, loam, or gravelly sandy clay loam. The content of clay ranges from 10 to 45 percent. The content of gravel is 0 to 35 percent. Reaction ranges from strongly acid to neutral.

The C/Bt/Bqm horizon has dry color of 10YR 6/4 or 6/6 or 7.5YR 6/4. Moist color is 10YR 3/3 or 5/4 or 7.5YR 4/2, 3/4, or 4/4. Texture is very gravelly sandy loam, sandy clay loam, sandy clay, or clay. The content of clay ranges from 12 to 55 percent. The content of gravel is 10 to 50 percent. Reaction ranges from neutral to moderately alkaline.

The Bt or Btb horizon, where it occurs, has dry color of 10YR 5/3, 6/3, 6/4, 6/6, or 7/3 or 7.5YR 5/3, 6/3, or 6/4. Moist color is 10YR 3/3, 3/4, 3/6, 4/2, 4/3, 4/4, 5/4, or 5/6 or 7.5YR 3/2, 3/4, 4/2 4/3, 4/4, or 4/6. Texture is very gravelly sandy loam, sandy loam, clay loam, sandy clay loam, sandy clay, or clay. The content of clay ranges from 12 to 55 percent. The content of gravel is 0 to 50 percent. Reaction ranges from slightly acid to moderately alkaline.

The 2Bt horizon, where it occurs, has dry color of 10YR 4/3, 5/4, 6/4, or 6/6 or 7.5YR 6/4. Moist color is 10YR 4/2, 4/4, or 5/4 or 7.5YR 3/4, 4/2, 4/3, 4/4, or 4/6. Texture is sandy clay or clay. The content of clay ranges from 40 to 55 percent. The content of gravel is 0 to 5 percent. Reaction ranges from slightly acid to moderately alkaline.

Durixeralfs

Durixeralfs consist of very shallow to moderately deep, somewhat poorly drained or moderately well drained soils that formed in alluvium derived from basalt. These soils are on mounds and in swales on strath terraces on Cascade foothills and on fan terraces. Slopes range from 0 to 5 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Durixeralfs

Reference Pedon

Durixeralfs gravelly fine sandy loam, on a slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 194 feet (59 m). When described on 5/20/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 3 cm); light brown (7.5YR 6/4) gravelly fine sandy loam, brown (7.5YR 4/3) moist; 15 percent clay; moderate thin platy structure parting to moderate fine subangular blocky; hard, friable, nonsticky, slightly plastic; common very fine roots; few very fine tubular pores; 10 percent very fine irregular strong brown (7.5YR 4/6 dry) oxidized iron masses throughout; 25 percent rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt1—1 to 5 inches (3 to 13 cm); brown (7.5YR 5/4) gravelly fine sandy loam, brown (7.5YR 4/3) moist; 18 percent clay; moderate medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; 10 percent clay films on surfaces along pores; 30 percent rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

Bt2—5 to 10 inches (13 to 25 cm); brown (7.5YR 5/4) gravelly loam, reddish brown (5YR 4/4) moist; 24 percent clay; moderate fine subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; many very fine tubular pores; 30 percent clay films on faces of peds; 25 percent rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt3—10 to 18 inches (25 to 46 cm); light brown (7.5YR 6/4) gravelly loam, reddish brown (5YR 4/3) moist; 26 percent clay; moderate fine subangular blocky structure; hard, friable, slightly sticky, moderately plastic; few very fine roots; many very fine tubular pores; 50 percent clay films on faces of peds; 25 percent rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt4—18 to 24 inches (46 to 61 cm); light brown (7.5YR 6/4) very gravelly clay loam, reddish brown (5YR 4/3) moist; 28 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine roots; many very fine tubular pores; 60 percent clay films on faces of peds; 25 percent well rounded cobbles and 30 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

2Bt5—24 to 27 inches (61 to 69 cm); pale brown (10YR 6/3) very gravelly sandy clay, brown (10YR 5/3) moist; 45 percent clay; weak fine angular blocky structure; extremely hard, very firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; 30 percent very fine irregular black (N 2/0 dry) manganese

masses throughout; 50 percent rounded gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

3Bqm—27 inches (69 cm); indurated duripan; few very fine roots on top of the horizon; 20 percent very fine irregular black (N 2/0 dry) manganese masses at the top of the horizon; cemented by silica; 10 percent rounded basalt cobbles and 40 percent rounded basalt gravel; discontinuous silica- and manganese-cemented capping 1/16 to 1/8 inch thick; rock fragments protruding through the top of the duripan.

The reference pedon is an example of the soils within this category. The properties represented in map units 321 and 377 vary. The particle-size classes represented by this description include fine-loamy, clayey-skeletal, and loamy-skeletal. The subgroups represented include Haplic and Typic.

Type location: Butte County, California; about 3.6 miles northwest of Oroville, approximately 3,150 feet west and 250 feet north of the southeast corner of sec. 34, T. 20 N., R. 3 E.; 39 degrees, 32 minutes, 19 seconds north latitude and 121 degrees, 37 minutes, 31 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

Depth to the duripan is 9 to 40 inches (23 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 24 to 43 percent clay and 30 to 45 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 0 to 1 percent in the A horizon and is less than 1 percent below the A horizon. A fluctuating water table can occur between the top of the duripan and the surface of the soil from December through April. Rock fragments on the surface range from 0 to 20 percent gravel, 0 to 20 percent cobbles, and 0 to 1 percent stones. Some pedons do not have a 2Bt horizon.

The A horizon has dry color of 7.5YR 4/3, 4/4, 5/3, 5/4, or 6/4 or 10YR 4/2, 4/4, 5/3, or 6/3. Moist color is 7.5YR 3/2, 3/3, 4/2, or 4/3 or 10YR 2/2, 3/1, 3/3, 4/2, or 4/3. Texture is gravelly sandy loam, gravelly loam, fine sandy loam, loam, cobbly loam, or gravelly fine sandy loam. The content of clay ranges from 12 to 15 percent. The horizon has 2 to 30 percent gravel and 0 to 10 percent cobbles. Redoximorphic features range from 0 to 60 percent oxidized iron masses and 5 to 10 percent iron-manganese masses. Reaction ranges from strongly acid to slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 4/4, 5/3, 5/4, 6/4, 4/6, or 5/6 or 10YR 4/2, 4/4, 5/3, 5/4, 6/2, or 6/3. Moist color is 7.5YR 3/3, 4/3, 3/4, or 4/4; 10YR 3/2, 3/3, 4/2, or 4/3; or 5YR 4/3, 3/4, or 4/4. Texture is gravelly fine sandy loam, gravelly loam, gravelly clay loam, gravelly sandy clay loam, fine sandy loam, loam, sandy clay loam, very gravelly loam, cobbly loam, or clay loam. The content of clay ranges from 15 to 30 percent. The content of gravel is 5 to 45 percent, and the content of cobbles is 0 to 15 percent. Redoximorphic features range from 0 to 50 percent oxidized iron masses and 0 to 20 percent iron-manganese masses. Reaction is moderately acid or slightly acid.

The lower part of the Bt horizon has dry color of 7.5YR 4/4, 5/3, 5/4, 5/6, 6/4, 7/4, or 4/6 or 10YR 5/3, 6/3, or 6/4. Moist color is 5YR 4/3 or 3/4; 7.5YR 3/3, 4/3, 3/4, or 4/4; or 10YR 4/3 or 5/3. Texture is very gravelly clay loam, gravelly clay loam, sandy clay loam, clay loam, very cobbly clay loam, or cobbly clay loam. The content of clay ranges from 28 to 38 percent. The content of gravel is 0 to 45 percent, and the content of cobbles is 0 to 25 percent. Redoximorphic features range from 0 to 30 percent oxidized iron masses, 0 to 20 percent iron-manganese masses, and 0 to 15 percent manganese masses. Reaction is moderately acid or slightly acid.

The 2Bt horizon has dry color of 10YR 4/2, 5/2, 5/3, 6/3, or 6/4 or 7.5YR 4/3, 5/3, 5/4, 6/4, or 6/6. Moist color is 10YR 3/2, 4/2, 4/3, or 5/3 or 7.5YR 3/3, 3/4, 4/3, 4/6, or

5/3. Texture is very gravelly sandy clay, very gravelly clay, very gravelly clay loam, gravelly clay, very gravelly silty clay, extremely gravelly clay, extremely gravelly sandy clay, or cobbly clay. The content of clay ranges from 35 to 50 percent. The horizon has 5 to 60 percent gravel and 0 to 25 percent cobbles. Redoximorphic features range from 0 to 50 percent iron-manganese masses, 0 to 10 percent oxidized iron masses, and 0 to 10 percent manganese masses. Reaction is slightly acid or neutral.

The 3Bqm horizon has 25 to 80 percent gravel and 0 to 45 percent cobbles. It ranges from indurated to very weakly cemented. Redoximorphic features range from 5 to 40 percent iron-manganese masses. The horizon is as much as 10 feet thick and overlies sandstone.

Durixerolls

Durixerolls consist of moderately deep, somewhat poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are on alluvial fans. Slopes range from 0 to 2 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Durixerolls

Typical Pedon

Durixerolls clay loam, on a slope of less than 1 percent, in a disked grain field, at an elevation of 157 feet (48 m). When described on 7/8/1993, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Ap1—0 to 6 inches (0 to 15 cm); brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; 35 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common fine and many very fine roots; common fine irregular and few very fine tubular pores; 5 percent very fine oxidized iron masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Ap2—6 to 12 inches (15 to 30 cm); brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; 31 percent clay; moderate fine and medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine and common very fine roots; few very fine and fine tubular pores; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bw1—12 to 24 inches (30 to 61 cm); yellowish brown (10YR 5/4) clay loam, dark brown (10YR 3/3) moist; 31 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine and common very fine roots; few very fine and fine tubular pores; neutral, pH 7.1 by Hellige-Truog; gradual smooth boundary.

Bw2—24 to 33 inches (61 to 84 cm); brown (7.5YR 5/4) clay loam, dark brown (7.5YR 3/4) moist; 31 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine roots; few very fine and fine tubular pores; 2 percent very fine oxidized iron masses and 5 percent very fine manganese masses; neutral, pH 7.2 by Hellige-Truog; abrupt smooth boundary.

2Bqm—33 inches (84 cm); indurated duripan; cemented by silica; 25 percent fine manganese coatings on top of the duripan.

Type location: Butte County, California; about 1.8 miles north of Nord, approximately 1,535 feet west and 1,215 feet south of the northeast corner of sec. 34, T. 23 N., R. 1 W.; 39 degrees, 48 minutes, 25 seconds north latitude and 121 degrees, 57 minutes, 40 seconds west longitude; NAD27; USGS Quad: Nord, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 130 to 150 days). The particle-size control section averages 27 to 35 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 4 percent to a depth of 12 inches (30 cm) and 0.1 to 1 percent below that depth. A fluctuating water table can occur between the top of the duripan and 12 inches (30 cm) below the surface of the soil from December through April.

The Ap horizon has dry color of 10YR 5/2 or 5/3. Moist color is 10YR 3/2 or 3/3. Texture is loam, clay loam, or silty clay loam. The content of clay ranges from 18 to 40 percent. The content of gravel is 0 to 15 percent. Redoximorphic features range from 0 to 15 percent oxidized iron masses. Reaction ranges from moderately acid to moderately alkaline.

The Bw horizon has dry color of 10YR 5/3 or 5/4 or 7.5YR 5/4 or 6/4. Moist color is 10YR 3/3 or 7.5YR 3/3 or 3/4. Texture is loam, clay loam, silty clay loam, silt loam, or sandy loam. The content of clay ranges from 17 to 35 percent. The content of gravel is 0 to 10 percent. Redoximorphic features range from 0 to 20 percent manganese masses and 0 to 10 percent oxidized iron masses. Reaction ranges from neutral to moderately alkaline.

Dystroxerepts

Dystroxerepts consist of moderately deep or deep, well drained soils that formed in colluvium derived from metavolcanic and metasedimentary rocks. These soils are on backslopes in canyons on Sierra Nevada foothills. Slopes range from 70 to 110 percent. The mean annual precipitation is about 62 inches (1,575 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, thermic Typic Dystroxerepts

Typical Pedon

Dystroxerepts, on a west-facing slope of 92 percent, under a cover of canyon live oak, Pacific poison oak, toyon, California laurel, and buckbrush, at an elevation of 1,260 feet (384 m). When described on 6/30/1998, the soil was dry to a depth of 12 inches (30 cm) and slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 4 inches (3 to 10 cm); very pale brown (10YR 7/3) extremely gravelly loam, brown (10YR 4/3) moist; 26 percent clay; moderate fine and medium subangular blocky structure parting to moderate fine granular; slightly hard, friable, moderately sticky, slightly plastic; many very fine and fine roots; many very fine to coarse irregular and tubular pores; 10 percent cobbles, 15 percent stones, and 40 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt1—4 to 12 inches (10 to 30 cm); very pale brown (10YR 7/4) extremely gravelly clay loam, yellowish brown (10YR 5/4) moist; 30 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular and irregular pores; 60 percent discontinuous faint clay films; 15 percent cobbles, 15 percent stones, and 25 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; gradual smooth boundary.

Bt2—12 to 22 inches (30 to 56 cm); very pale brown (10YR 7/4) extremely gravelly clay loam, yellowish brown (10YR 5/4) moist; 28 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common very fine to coarse roots; many very fine to coarse tubular and irregular pores; 60 percent discontinuous faint clay films; 20 percent cobbles and 40 percent gravel; very strongly acid, pH 5.1 by Hellige-Truog; gradual smooth boundary.

Bt3—22 to 28 inches (56 to 71 cm); very pale brown (10YR 7/4) extremely gravelly loam, yellowish brown (10YR 5/4) moist; 27 percent clay; weak fine subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common very fine to medium roots; many very fine and fine tubular and irregular pores; 60 percent discontinuous faint clay films; 30 percent cobbles and 40 percent gravel; strongly acid, pH 5.6 by Hellige-Truog; clear smooth boundary.

Bt4—28 to 38 inches (71 to 97 cm); very pale brown (10YR 7/4) extremely cobbly sandy clay loam, yellowish brown (10YR 5/4) moist; 27 percent clay; weak fine subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; few very fine to coarse roots; many very fine to medium tubular and irregular pores; 60 percent discontinuous faint clay films; 40 percent gravel and 45 percent cobbles; moderately acid, pH 5.8 by Hellige-Truog; clear wavy boundary.

R—38 inches (97 cm); indurated metavolcanic bedrock.

Type location: Butte County, California; about 1.1 miles south of Bear Lake, approximately 200 feet south and 2,000 feet east of the northwest corner of sec. 31, T. 24 N., R. 3 E.; 39 degrees, 54 minutes, 10 seconds north latitude and 121 degrees, 41 minutes, 15 seconds west longitude; NAD83; USGS Quad: Cohasset, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 60 inches (51 to 152 cm). The mean annual soil temperature is 59 to 69 degrees F (15 to 21 degrees C). The soil moisture control section is dry in all parts from about June to November (about 150 days). The particle-size control section averages 17 to 30 percent clay and 50 to 80 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 10 to 50 percent gravel, 10 to 30 percent cobbles, 10 to 30 percent stones, and 0 to 30 percent boulders.

The A horizon has dry color of 10YR 6/3, 6/4, 7/3, or 7/4. Moist color is 10YR 4/2 or 4/3. Texture is very gravelly loam, extremely gravelly loam, very gravelly fine sandy loam, or extremely gravelly fine sandy loam. The content of clay ranges from 12 to 27 percent. The horizon has 30 to 40 percent gravel, 5 to 15 percent cobbles, 5 to 15 percent stones, and 0 to 10 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 6/3, 6/4, or 7/4. Moist color is 10YR 4/2, 4/3, 4/4, or 5/4. Texture is extremely gravelly fine sandy loam, extremely gravelly loam, very cobbly fine sandy loam, extremely cobbly fine sandy loam, extremely cobbly sandy clay loam, or extremely gravelly clay loam. The content of clay ranges from 10 to 30 percent. The horizon has 15 to 50 percent gravel, 15 to 50 percent cobbles, 0 to 25 percent stones, and 0 to 5 percent boulders. Reaction ranges from strongly acid to neutral.

Earlal Series

The Earlal series consists of shallow, well drained soils that formed in residuum and colluvium derived from serpentinized ultramafic rocks. These soils are on ridgetops and side slopes on ultramafic Sierra Nevada mountains. Slopes range from 3 to 80 percent. The mean annual precipitation is about 52 inches (1,321 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Loamy-skeletal, magnesic, mesic Lithic Haploxeralfs

Typical Pedon

Earlal very gravelly loam, on a south-facing slope of 20 percent, under a cover of foothill pine, whiteleaf manzanita, blue oak, buckbrush, and canyon live oak, at an elevation of 2,305 feet (703 m). When described on 10/19/2000, the soil was dry to a depth of 3 inches (8 cm) and very slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (7.5YR 5/3) very gravelly loam, dark brown (7.5YR 3/2) moist; 25 percent clay; moderate fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and few medium roots; many very fine to medium irregular and tubular pores; 10 percent cobbles and 25 percent gravel; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

Bt1—3 to 7 inches (8 to 18 cm); brown (7.5YR 5/3) very gravelly clay loam, brown (7.5YR 4/2) moist; 34 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium roots; many very fine to medium tubular pores; 60 percent continuous distinct clay films; 20 percent cobbles and 25 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt2—7 to 14 inches (18 to 36 cm); brown (7.5YR 5/4) extremely gravelly clay loam, dark brown (7.5YR 3/3) moist; 37 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium and common coarse roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 35 percent cobbles and 40 percent gravel; neutral, pH 7.0 by Hellige-Truog; abrupt wavy boundary.

R—14 inches (36 cm); indurated serpentinite bedrock.

Type location: Butte County, California; about 1.12 miles east of Concow School, approximately 1,250 feet north and 550 feet west of the southeast corner of sec. 27, T. 22 N., R. 4 E.; 39 degrees 43 minutes, 47 seconds north latitude and 121 degrees, 30 minutes, 26 seconds west longitude; NAD83; USGS Quad: Cherokee, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 57 to 59 degrees F (14 to 15 degrees C). The particle-size control section averages 27 to 35 percent clay and 50 to 70 percent rock fragments, mostly gravel and cobbles. Mineralogy is magnesic. Rock fragments on the surface range from 20 to 50 percent gravel, 20 to 30 percent cobbles, 10 to 20 percent stones, and 5 to 15 percent boulders.

The A horizon has dry color of 7.5YR 5/3, 6/3, or 6/4 or 10YR 6/4. Moist color is 7.5YR 3/2, 3/3, or 3/4 or 10YR 4/3. Texture is very gravelly loam, extremely gravelly loam, very cobbly loam, or very stony loam. The content of clay ranges from 18 to 27 percent. The horizon has 20 to 50 percent gravel, 10 to 25 percent cobbles, 0 to 10 percent stones, and to 0 to 10 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 5YR 5/3, 5/4, or 6/4; 7.5YR 6/4; or 10YR 7/4. Moist color is 5YR 3/3 or 4/2; 7.5YR 3/4, 4/3, 4/4, or 4/6; or 10YR 4/3, 4/4, or 5/4. Texture is very gravelly clay loam, extremely gravelly clay loam, very cobbly clay loam, extremely cobbly clay loam, or very gravelly loam. The content of clay ranges from 24 to 40 percent. The horizon has 20 to 40 percent gravel, 20 to 40 percent cobbles, 0 to 10 percent stones, and to 0 to 10 percent boulders. Reaction is slightly acid or neutral.

Eastbiggs Series

The Eastbiggs series consists of moderately deep, somewhat poorly drained soils that formed in alluvium derived from igneous and metamorphic rocks. These soils are on mounds on low terraces. Slopes range from 0 to 3 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, active, thermic Abruptic Durixeralfs

Typical Pedon

Eastbiggs loam, on a west-facing slope of 2 percent, under a cover of annual grasses and forbs, at an elevation of 90 feet (27 m). When described on 5/11/1992, the soil was dry to a depth of 4 inches (10 cm) and slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches (0 to 8 cm); strong brown (7.5YR 4/6) loam, dark brown (7.5YR 3/4) moist; 23 percent clay; weak fine subangular blocky structure; hard, friable, slightly sticky, slightly plastic; many very fine roots; few fine and many very fine tubular pores; 10 percent fine black (N 2/0 moist) iron-manganese nodules; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

A2—3 to 10 inches (8 to 25 cm); strong brown (7.5YR 4/6) loam, dark brown (7.5YR 3/4) moist; 23 percent clay; weak fine subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; few fine and many very fine tubular pores; 10 percent fine black (N 2/0 moist) manganese masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

BAt—10 to 17 inches (25 to 43 cm); strong brown (7.5YR 4/6) loam, dark brown (7.5YR 3/4) moist; 26 percent clay; weak fine subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; few fine and many very fine tubular pores; 10 percent fine black (N 2/0 moist) iron-manganese nodules and 15 percent fine black (N 2/0 moist) manganese masses; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

2Bt—17 to 27 inches (43 to 69 cm); brown (7.5YR 5/4) clay, brown (7.5YR 4/4) moist; 50 percent clay; strong coarse prismatic structure; very hard, firm, very sticky, very plastic; common very fine roots; common very fine tubular pores; 2 percent pressure faces; 10 percent fine black (N 2/0 moist) iron-manganese nodules and 15 percent fine black (N 2/0 moist) manganese masses; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

3Bqm1—27 to 34 inches (69 to 86 cm); duripan with indurated laminar capping 1/4 to 1/2 inch (6 to 12 mm) thick; strong thin platy structure; very rigid, indurated, cemented by silica; roots matted on top of the capping; black (N 2/0 moist) manganese coatings, 1/8 inch (3 mm) thick, on top of the laminar capping; abrupt smooth boundary.

3Bqm2—34 to 60 inches (86 to 152 cm); duripan; rigid, strongly cemented by silica.

Type location: Butte County, California; about 1.4 miles west of Honcut, approximately 1,450 feet west and 1,500 feet south of the northeast corner of sec. 18, T. 17 N., R. 4 E.; 39 degrees, 19 minutes, 55 seconds north latitude and 121 degrees, 33 minutes, 43 seconds west longitude; NAD27; USGS Quad: Honcut, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry from June to November (170 to 190 days). The particle-size control section averages 35 to 50 percent clay. There is an abrupt boundary at the top of the argillic horizon with an absolute clay increase of at least 15 percent. Mineralogy is

mixed. Redoximorphic features, such as manganese nodules, manganese masses with color of N 2/0 moist, and oxidized iron masses with color of 7.5YR 4/6 or 5/6 moist, occur at a depth of 3 to 34 inches (8 to 86 cm). A fluctuating water table can occur between the top of the duripan and 14 inches (36 cm) below the surface of the soil from December through April. Some pedons have lime in the 2Bt horizon.

The A horizon has dry color of 7.5YR 4/4, 4/6, 5/4, or 6/2 or 10YR 5/4, 6/2, 6/3, or 6/4. Moist color is 7.5YR 3/4 or 4/4 or 10YR 3/2, 3/3, or 3/4. Texture is loam or fine sandy loam. The content of clay ranges from 15 to 27 percent. The content of organic matter is 0.2 to 1 percent. Reaction ranges from moderately acid to neutral.

The BAt, Bt, or Btb horizon has dry color of 7.5YR 4/6, 5/3, or 6/3 or 10YR 5/4. Moist color is 7.5YR 3/4, 4/3, or 5/3; 10YR 4/3; or 5YR 4/4. Texture is loam, clay loam, or sandy clay loam. The content of clay ranges from 20 to 35 percent. The content of organic matter is 0.1 to 0.5 percent. Reaction is slightly acid or neutral.

The 2Bt horizon has dry color of 7.5YR 4/4, 5/4, 5/6, or 6/4. Moist color is 7.5YR 4/3 or 4/4 or 5YR 4/6. Texture is clay. The content of clay ranges from 40 to 50 percent. The content of organic matter is 0.1 to 0.3 percent. Reaction is neutral.

Edjobe Series

The Edjobe series consists of very deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are on basin rims. Slopes are 0 to 1 percent. The mean annual precipitation is about 21 inches (533 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Epiaquerts

Typical Pedon

Edjobe silty clay, on a slope of less than 1 percent, under a cover of weeds in a fallow field, at an elevation of 122 feet (37 m). When described on 7/15/1993, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted).

Ap—0 to 8 inches (0 to 20 cm); very dark gray (10YR 3/1) silty clay, black (10YR 2/1) moist; 55 percent clay; strong medium angular blocky structure parting to strong fine granular; extremely hard, firm, very sticky, very plastic; common fine roots; common fine irregular pores; slightly alkaline, pH 7.5 pH by Hellige-Truog; abrupt smooth boundary.

Bssg—8 to 25 inches (20 to 64 cm); dark gray (10YR 4/1) silty clay, very dark gray (10YR 3/1) moist; 55 percent clay; strong very coarse prismatic structure parting to strong medium angular blocky; extremely hard, firm, very sticky, very plastic; few very fine and fine roots; few very fine tubular pores; many slickensides; slightly alkaline, pH 7.5 pH by Hellige-Truog; clear wavy boundary.

Bkssg—25 to 32 inches (64 to 81 cm); dark gray (10YR 4/1) silty clay, very dark gray (10YR 3/1) moist; 42 percent clay; strong medium angular blocky structure; extremely hard, firm, very sticky, very plastic; few very fine roots; common very fine tubular pores; many slickensides; few fine round carbonate concretions; common fine spherical and irregular soft masses of carbonate throughout; moderately alkaline, pH 8.0 pH by Hellige-Truog; gradual wavy boundary.

Bw1—32 to 48 inches (81 to 122 cm); dark gray (10YR 4/1) silty clay loam, dark grayish brown (10YR 4/2) moist; 37 percent clay; moderate fine and medium angular blocky structure; very hard, firm, sticky, plastic; few very fine roots; common very fine and few medium tubular pores; slightly effervescent throughout; moderately alkaline, pH 8.0 pH by Hellige-Truog; gradual smooth boundary.

2Bw2—48 to 60 inches (122 to 152 cm); light brownish gray (10YR 6/2) clay loam, grayish brown (10YR 5/2) moist; 30 percent clay; weak fine and medium angular

blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine roots; common very fine and fine and few medium tubular pores; many fine faint brown (10YR 4/3 moist) irregular soft oxidized iron masses throughout and few fine patchy prominent black (N 2/0 moist) manganese masses on faces of peds; slightly effervescent; moderately alkaline, pH 8.0 pH by Hellige-Truog; gradual smooth boundary.

2Bq—60 to 69 inches (152 to 175 cm); pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; 28 percent clay; massive; hard, firm, slightly sticky, slightly plastic; few very fine roots; common fine and very fine and few medium tubular pores; many fine distinct brown (7.5YR 4/4 moist) irregular soft oxidized iron masses throughout; 5 percent weakly cemented durinodes; slightly effervescent throughout; moderately alkaline, pH 8.0 pH by Hellige-Truog; abrupt smooth boundary.

2Bkqm—69 to 75 inches (175 to 190 cm); pale brown (10YR 6/3), moderately cemented duripan, brown (7.5YR 4/4) moist; indurated capping with continuous silica cementation; weak thin platy structure; very rigid, nonsticky, nonplastic; common fine and medium carbonate threads; moderately alkaline, pH 8.0 pH by Hellige-Truog.

Type location: Butte County, California; about 3 miles south of Durham, approximately 5,050 feet west and 4,950 feet south of the intersection of Grainland Road and Durham Nelson Road; in an unsectionized area in the Aquas Frias Land Grant; 39 degrees, 35 minutes, 48 seconds north latitude and 121 degrees, 49 minutes, 2 seconds west longitude; NAD27; USGS Quad: Nelson, California.

Range in Characteristics

Depth to the duripan is 60 to 80 inches (152 to 203 cm). The mean annual soil temperature is 60 to 62 degrees F (16 to 17 degrees C). The soil moisture control section is dry from July to November (120 to 125 days). The particle-size control section averages 40 to 50 percent clay. Mineralogy is smectitic. The soils are calcareous at a depth of 25 to 72 inches (64 to 183 cm). Surface-initiated, reversible cracks 1 to 2 inches (2.54 to 5 cm) wide extend to a depth of 31 inches (79 cm) from about May 15 to October 15 (140 to 160 days) when the soils are not irrigated. Common or many intersecting slickensides occur in the Bssg and Bkssg horizons, from 8 to 50 inches (20 to 127 cm). A fluctuating water table can occur between the top of the duripan and 10 inches (25 cm) below the surface of the soil from December through May. Redoximorphic features, such as a reduced matrix, occur in the overlying basin material, and oxidized iron masses and manganese masses occur in the underlying loamy material. Some pedons do not have gleyed matrix colors. In some pedons, oxidized iron masses, manganese masses, and/or iron-manganese concretions occur in the overlying basin material and iron-manganese concretions occur in the underlying loamy material. Some pedons do not have accumulations of calcium carbonate.

The Ap horizon has dry color of 10YR 3/1, 4/1, 4/2, 5/1, or 5/2. Moist color is 10YR 2/1, 3/1, or 3/2. The content of clay ranges from 40 to 55 percent. Reaction ranges from slightly acid to slightly alkaline.

The Bssg horizon has dry color of 10YR 4/1, 5/1, 5/2, or 4/2. Moist color is 10YR 3/1, 4/1, or 4/2. Texture is silty clay or clay. The content of clay ranges from 40 to 55 percent. Reaction ranges from neutral to moderately alkaline.

The Bkssg horizon has dry color of 10YR 4/1, 5/1, 5/2, or 4/2. Moist color is 10YR 3/1, 4/1, or 4/2. Texture is silty clay or clay. The content of clay ranges from 40 to 50 percent. Reaction is slightly alkaline or moderately alkaline.

The Bw horizon has dry color of 10YR 4/1, 5/1, 5/2, or 4/2. Moist color is 10YR 3/1, 4/1, or 4/2. Texture is silty clay loam or clay loam. The content of clay ranges from 27 to 40 percent. Reaction is slightly alkaline or moderately alkaline.

The 2Bw horizon has dry color of 10YR 6/2 or 4/2. Moist color is 10YR 5/2 or 4/2. Texture is clay loam or loam. The content of clay ranges from 25 to 40 percent. Redoximorphic features, such as oxidized iron masses (10YR 4/4 or 7.5YR 3/4, 4/4, or 4/6 moist), manganese masses (N 2/0 moist), and/or iron-manganese concretions (N 2/0 moist), occur on faces of peds, in pores, and throughout the horizon. Reaction is slightly alkaline or moderately alkaline.

The 2Bq horizon has dry color of 10YR 6/3 or 5/3. Moist color is 10YR 4/3 or 5/3. Texture is clay loam or loam. The content of clay ranges from 25 to 35 percent. Redoximorphic features, such as oxidized iron masses (10YR 4/4 or 7.5YR 3/4, 4/4, or 4/6 moist), manganese masses (N 2/0 moist), and/or iron-manganese concretions (N 2/0 moist), occur on faces of peds, in pores, and throughout the horizon. Rupture resistance ranges from weakly cemented to moderately cemented. Reaction is slightly alkaline or moderately alkaline.

The 2Bkqm horizon has dry color of 10YR 6/3 or 6/4. Moist color is 10YR 4/3 or 4/4 or 7.5YR 4/4. Rupture resistance ranges from indurated to strongly cemented. The horizon has alternating layers that are weakly cemented and moderately cemented with silica and carbonates. Reaction is moderately alkaline.

Elsey Series

The Elsey series consists of moderately deep, somewhat poorly drained soils that formed in residuum weathered from basalt. These soils are on mounds on the top of basalt plateaus on volcanic Sierra Nevada foothills. Slopes range from 2 to 15 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Oxyaquic Haplohumults

Typical Pedon

Elsey loam, on a north-facing slope of 3 percent, under a cover of annual grasses, at an elevation of 1,330 feet (405 m). When described on 10/18/2000, the soil was moist from 0 to 17 inches (0 to 43 cm) and dry below 17 inches. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (10YR 5/3) loam, dark brown (7.5YR 3/2) moist; 16 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many fine roots throughout; many fine irregular pores; 10 percent subangular basalt gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.

BAt—3 to 8 inches (8 to 20 cm); brown (10YR 5/3) gravelly loam, dark brown (7.5YR 3/2) moist; 18 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many fine roots throughout; many fine irregular pores; 5 percent patchy faint clay films on surfaces along pores; 15 percent subangular basalt gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.

Bt1—8 to 17 inches (20 to 43 cm); brown (10YR 4/3) cobbly loam, dark brown (7.5YR 3/2) moist; 24 percent clay; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; many fine roots throughout and common medium roots between peds; common fine irregular and tubular pores; 10 percent discontinuous faint clay films on surfaces along pores; 10 percent subangular basalt gravel and 20 percent subangular basalt cobbles; moderately acid, pH 5.8 by Hellige-Truog; clear smooth boundary.

Bt2—17 to 25 inches (43 to 64 cm); brown (10YR 4/3) cobbly loam, dark brown (7.5YR 3/2) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common fine and

few medium roots between peds; common fine irregular and tubular pores; 15 percent discontinuous faint clay films on surfaces along pores; 10 percent subangular basalt gravel and 20 percent subangular basalt cobbles; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

Bt3—25 to 32 inches (64 to 81 cm); brown (10YR 4/3) very cobbly clay loam, dark brown (7.5YR 3/2) moist; 26 percent clay; moderate medium and fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common fine and few very fine roots between peds; few fine tubular pores; 20 percent discontinuous faint clay films on surfaces along pores; 10 percent subangular basalt gravel and 30 percent basalt cobbles; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

Bt4—32 to 38 inches (81 to 97 cm); brown (10YR 4/3) very cobbly loam, dark brown (7.5YR 3/2) moist; 25 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common fine roots between peds; few fine tubular pores; 20 percent discontinuous faint clay films on surfaces along pores; 15 percent subangular basalt gravel and 40 percent basalt cobbles; moderately acid, pH 6.0 by Hellige-Truog; abrupt wavy boundary.

R—38 inches (97 cm); indurated basalt bedrock.

Type location: Butte County, California; about 5 miles north of Oroville, approximately 1,200 feet south and 750 feet west of the northeast corner of sec. 17, T. 20 N., R. 4 E.; 39 degrees, 35 minutes, 41.1 seconds north latitude and 121 degrees, 32 minutes, 31.9 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The depth to lithic basalt bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about May to November (about 150 to 200 days). The particle-size control section averages 24 to 27 percent clay and 15 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. By sum of cations, base saturation ranges from 1.6 to 7 percent. A fluctuating water table can occur between the top of the bedrock and 15 inches (38 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 5 to 15 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 7.5YR 4/4 or 10YR 3/4, 4/3, 4/4, or 5/3. Moist color is 7.5YR 2/2, 3/2, or 3/3; 10YR 2/2, 3/2, or 3/3; or 5YR 2/2. Texture is loam or gravelly loam. The content of clay ranges from 15 to 22 percent. The horizon has 5 to 15 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 4 to 8 percent. Reaction is strongly acid or moderately acid.

The BAt horizon has dry color of 7.5YR 3/4 or 4/4 or 10YR 3/4, 4/4, or 5/3. Moist color is 7.5YR 3/2 or 3/3, 10YR 3/2 or 3/3, or 5YR 3/2. Texture is loam or gravelly loam. The content of clay ranges from 18 to 24 percent. The horizon has 5 to 20 percent gravel and 0 to 10 percent cobbles. The content of organic matter is 3 to 6 percent. Reaction is strongly acid or moderately acid.

The Bt1 and Bt2 horizons have dry color of 7.5YR 4/3 or 4/4 or 10YR 3/4, 4/3, 4/4, 5/3, or 5/4. Moist color is 7.5YR 3/2 or 3/3, 10YR 3/2 or 3/3, or 5YR 3/2. Texture is loam, gravelly loam, or cobbly loam. The content of clay ranges from 19 to 27 percent. The horizons have 5 to 20 percent gravel and 5 to 20 percent cobbles. The content of organic matter is 1 to 3 percent. Reaction is strongly acid or moderately acid.

The Bt3 and Bt4 horizons have dry color of 7.5YR 4/3 or 4/4 or 10YR 3/4, 4/3, or 4/4. Moist color is 7.5YR 3/2, 3/3, or 4/3; 10YR 3/2, 3/3, or 3/4; or 5YR 3/3. Texture is cobbly loam, cobbly clay loam, very cobbly loam, very cobbly clay loam, gravelly loam, gravelly clay loam, or very gravelly clay loam. The content of clay ranges from 25 to 33 percent. The horizons have 5 to 25 percent gravel and 10 to 40 percent

cobbles. The content of organic matter is 0.2 to 1 percent. Reaction is strongly acid or moderately acid.

Endoaquolls

Endoaquolls consist of very deep, poorly drained soils that formed in alluvium derived from volcanic and metamorphic rocks. These soils are in meadows in Sierra Nevada and Cascade mountain valleys. Slopes range from 0 to 8 percent. The mean annual precipitation is about 70 inches (1,778 mm), and the mean annual air temperature is about 50 degrees F (10 degrees C).

Taxonomic class: Endoaquolls

Typical Pedon

Endoaquolls, on a west-facing slope of 3 percent, under a cover of sedges, rushes, forbs, and grasses, at an elevation of 4,236 feet (1,291 m). When described on 11/5/2003, the soil was moist to a depth of 3 inches (8 cm), dry from 3 to 28 inches (8 to 71 cm), and wet below 28 inches (71 cm). (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches (0 to 8 cm); dark grayish brown (10YR 4/2) loam, black (10YR 2/1) moist; 25 percent clay; moderate fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine and fine irregular pores; NaF pH 9.0; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

A2—3 to 8 inches (8 to 20 cm); dark grayish brown (10YR 4/2) loam, black (10YR 2/1) moist; 27 percent clay; strong fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine to medium roots; many very fine and fine irregular pores; NaF pH 9.0; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

A3—8 to 17 inches (20 to 43 cm); dark grayish brown (10YR 4/2) clay loam, black (10YR 2/1) moist; 29 percent clay; strong fine to coarse subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium roots; many very fine and fine irregular pores; NaF pH 9.0; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bw—17 to 28 inches (43 to 71 cm); grayish brown (10YR 5/2) silty clay, very dark grayish brown (10YR 3/2) moist; 40 percent clay; moderate coarse prismatic structure parting to strong medium and coarse angular blocky; very hard, friable, very sticky, very plastic; common very fine to medium roots; many very fine to medium irregular and tubular pores; NaF pH 9.0; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.

Ab—28 to 43 inches (71 to 109 cm); dark grayish brown (10YR 4/2) silty clay, black (10YR 2/1) moist; 43 percent clay; moderate medium and coarse subangular blocky structure; very hard, friable, very sticky, very plastic; common very fine to medium roots; many very fine and fine irregular and common very fine tubular pores; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

2Bg1—43 to 58 inches (109 to 147 cm); light gray (10YR 7/2) loam, dark grayish brown (10YR 4/2) moist; 24 percent clay; weak medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; common very fine and fine irregular and tubular pores; 10 percent medium prominent irregular oxidized iron masses that have sharp boundaries and are on surfaces along root channels; slightly acid, pH 6.6 by Hellige-Truog; clear smooth boundary.

2Bg2—58 to 73 inches (147 to 185 cm); light gray (2.5Y 7/2) sandy clay loam, dark grayish brown (2.5Y 4/2) moist; 23 percent clay; weak medium subangular blocky

structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and fine tubular and irregular pores; neutral, pH 6.8 by Hellige-Truog.

Type location: Butte County, California; about 1 mile north of Butte Meadows, approximately 2,600 feet east and 1,500 feet south of the northwest corner of sec. 20, T. 26 N., R. 4 E.; 40 degrees, 5 minutes, 47 seconds north latitude and 121 degrees, 32 minutes, 49 seconds west longitude; NAD27; USGS Quad: Butte Meadows, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 47 to 50 degrees F (8 to 10 degrees C). The soil moisture control section is dry in all parts from about July to October (about 120 days). The particle-size control section averages 30 to 45 percent clay and 0 to 10 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur from the surface of the soil to a depth of 43 inches (109 cm) from December through June and from a depth of 17 to 87 inches (43 to 220 cm) from July through November. Redoximorphic features, such as low chromas, occur in all horizons. Redoximorphic concentrations are in the lower part of the profile.

The A horizon has dry color of 10YR 4/2 or 2.5Y 5/2 or 6/1. Moist color is 10YR 2/1 or 3/2 or 2.5Y 3/1. Texture is loam, clay loam, silt loam, or fine sandy loam. The content of clay ranges from 16 to 30 percent. The content of gravel is 0 to 5 percent. Reaction is slightly acid or neutral.

The Bw horizon has dry color of 10YR 5/2 or 4/2. Moist color is 10YR 3/2 or 3/1. Texture is clay loam or silty clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 0 to 5 percent. Reaction is neutral.

The Ab horizon has dry color of 10YR 4/2 or 5/2. Moist color is 10YR 2/1 or 3/1. Texture is clay loam or silty clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 0 to 5 percent. Reaction is neutral.

The 2Bg horizon has dry color of 10YR 7/2, 2.5Y 7/2, or 2.5Y 5/1 or 6/1. Moist color is 10YR 4/2 or 2.5Y 4/1 or 4/2. Texture is loam, sandy clay loam, silty clay, or clay loam. The content of clay ranges from 20 to 50 percent. The horizon has 0 to 10 percent gravel and 0 to 10 percent cobbles. Reaction ranges from slightly acid to slightly alkaline.

Esquon Series

The Esquon series consists of deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in flood basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Epiaquerts

Typical Pedon

Esquon clay, on a slope of less than 1 percent, under a cover of rice, at an elevation of 107 feet (33 m). When described on 5/3/1995, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Ap—0 to 5 inches (0 to 13 cm); dark grayish brown (10YR 4/2) clay, dark gray (10YR 4/1) moist; 47 percent clay; moderate medium subangular blocky structure parting to weak fine granular; extremely hard, firm, very sticky, very plastic; common very fine and fine roots; many fine irregular pores; common fine irregular brown (7.5YR

4/4 moist) oxidized iron masses; noneffervescent; very strongly acid, pH 4.5 by pH meter 1:1 water; abrupt smooth boundary.

Bssg—5 to 11 inches (13 to 28 cm); dark grayish brown (10YR 4/2) clay, dark gray (10YR 4/1) moist; 45 percent clay; moderate medium prismatic structure parting to weak fine angular blocky; extremely hard, firm, very sticky, very plastic; few very fine and fine roots; few very fine tubular pores; few slickensides; many fine irregular dark brown (7.5YR 3/4 moist) oxidized iron masses, common fine irregular black (2/0 moist) manganese masses, and common fine spherical black (N 2/0 moist) iron-manganese concretions; noneffervescent; slightly acid, pH 6.2 by pH meter 1:1 water; abrupt smooth boundary.

Bss1—11 to 22 inches (28 to 56 cm); dark grayish brown (10YR 4/2) clay, dark grayish brown (10YR 4/2) moist; 44 percent clay; moderate coarse prismatic structure parting to moderate fine angular blocky; extremely hard, firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; few slickensides; common fine irregular dark gray (10YR 4/1 moist) iron depletions, many fine irregular brown (10YR 4/3 moist) oxidized iron masses, common fine irregular brown (7.5YR 4/4 moist) oxidized iron masses, and common fine spherical black (N 2/0 moist) manganese masses; noneffervescent; 1 percent subrounded gravel; neutral, pH 7.3 by pH meter 1:1 water; gradual smooth boundary.

Bss2—22 to 35 inches (56 to 89 cm); brown (10YR 4/3) clay, dark grayish brown (10YR 4/2) moist; 44 percent clay; moderate medium prismatic structure parting to weak fine angular blocky; extremely hard, very firm, very sticky, very plastic; few very fine roots; common very fine tubular pores; few slickensides; common fine threadlike dark gray (10YR 4/1 moist) iron depletions and few fine spherical black (N 2/0 moist) iron-manganese nodules; noneffervescent; 1 percent subrounded gravel; slightly alkaline, pH 7.5 by pH meter 1:1 water; gradual smooth boundary.

Bkss1—35 to 46 inches (89 to 117 cm); brown (10YR 5/3) clay, brown (10YR 4/3) moist; 41 percent clay; weak fine prismatic structure parting to weak fine angular blocky; very hard, firm, very sticky, very plastic; common very fine tubular pores; few slickensides; common fine threadlike gray (10YR 5/1 moist) iron depletions; finely disseminated carbonates; slightly effervescent; 1 percent subrounded gravel; slightly alkaline, pH 7.7 by pH meter 1:1 water; clear smooth boundary.

Bkss2—46 to 50 inches (117 to 127 cm); brown (10YR 5/3) silty clay, brown (10YR 4/3) moist; 42 percent clay; weak fine angular blocky structure; very hard, firm, very sticky, very plastic; common very fine and few fine tubular pores; few slickensides; few fine spherical black (N 2/0 moist) iron-manganese concretions; finely disseminated carbonates; slightly effervescent; slightly alkaline, pH 7.7 by pH meter 1:1 water; abrupt smooth boundary.

Bk—50 to 56 inches (127 to 142 cm); light yellowish brown (10YR 6/4) clay loam, brown (10YR 4/3) moist; 25 percent clay; weak fine subangular blocky structure; rigid, moderately sticky, moderately plastic; common very fine tubular pores; few fine spherical black (N 2/0 moist) iron-manganese concretions; common fine threadlike carbonate masses; slightly effervescent; slightly alkaline, pH 7.7 by pH meter 1:1 water; abrupt smooth boundary.

2Bkqm—56 to 67 inches (142 to 170 cm); moderately cemented duripan; very pale brown (10YR 7/4) loam, brown (10YR 4/3) moist; 18 percent clay; massive; rigid, nonsticky, slightly plastic; common very fine tubular pores; common fine threadlike carbonate masses; strongly effervescent; 5 percent subrounded gravel; moderately alkaline, pH 8.1 by pH meter 1:1 water; $^{1}/_{32}$-inch (1-mm) platy silica capping on the duripan.

Type location: Butte County, California; about 1.4 miles east of Richvale, approximately 2,150 feet east and 100 feet south of the northwest corner of sec. 23,

T. 19 N., R. 2 E.; 39 degrees, 29 minutes, 36 seconds north latitude and 121 degrees, 43 minutes, 4 seconds west longitude; NAD27; USGS Quad: Biggs, California.

Range in Characteristics

Depth to the duripan is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 66 degrees F (17 to 19 degrees C). The soil moisture control section is dry from June to October (120 to 125 days). The particle-size control section averages 50 to 55 percent clay. By ammonium acetate, base saturation ranges from 90 to 100 percent throughout the profile. Reversible, surface-initiated cracks 1 to 2 inches (2.54 to 5 cm) wide extend to a depth of 30 to 35 inches (76 to 89 cm) from May 15 to October 15 (150 days) when the soils are not irrigated. The depth to calcium carbonate ranges from 20 to 60 inches (51 to 152 cm). Effervescence ranges from none to strong. Electrical conductivity is less than 1 mmho/cm throughout the profile. Common or many slickensides are in the Bssg, Bss, and Bkss horizons, at a depth of 5 to 50 inches (13 to 127 cm). A fluctuating water table can occur between the top of the duripan and the surface of the soil from December through May. In some areas it can occur between the top of the duripan and the surface of the soil from November through June and from the top of the duripan to a depth of 36 inches (91 cm) from July through October. Redoximorphic features, such as manganese nodules, oxidized iron masses with color of 7.5YR 4/6 moist, manganese masses with color of N 2/0 moist, iron depletions with color of 10YR 4/1 or 5/1 moist, and a reduced matrix with chroma of 2 or less, occur in the horizons above the duripan. Some pedons have overwash of silt loam, silty clay loam, or stratified very fine sandy loam to silt loam. The overwash ranges from 6 to 12 inches (15 to 51 cm) in thickness and has a clay content of 12 to 40 percent.

The Ap or Ab horizon has dry color of 10YR 3/1, 4/1, 4/2, 5/1, or 5/2. Moist color is 10YR 3/1 or 3/2. Texture is clay or silty clay. The content of clay ranges from 40 to 60 percent. The content of organic matter is 1 to 2.5 percent. Reaction ranges from very strongly acid to neutral.

The Bssg and Bss horizons have dry color of 10YR 4/1, 4/2, or 5/2. Moist color is 10YR 3/1 or 3/2. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 2 percent. The content of organic matter is 0.4 to 1 percent. Reaction ranges from slightly acid to moderately alkaline.

The Bkss horizon has dry color of 10YR 5/3 or 6/3. Moist color is 10YR 3/3 or 4/3. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 2 percent. The content of organic matter is 0.1 to 0.5 percent. Reaction ranges from neutral to moderately alkaline.

The Bk horizon has dry color of 10YR 5/3 or 4/3. Moist color is 10YR 3/3 or 4/3. Texture is silty clay, clay loam, or silty clay loam. The content of clay ranges from 25 to 60 percent. The content of organic matter is 0.1 to 0.5 percent. Reaction is slightly alkaline or moderately alkaline.

The 2Bkqm horizon has dry color of 10YR 5/3 or 4/3. Moist color is 10YR 4/3. Rupture resistance ranges from indurated to strongly cemented. The horizon has alternating layers that are weakly cemented and moderately cemented with silica and lime. Reaction is moderately alkaline.

Fallager Series

The Fallager series consists of very shallow, poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are in swales on strath terraces on Cascade foothills and on fan terraces in the Sacramento Valley. Slopes range from 0 to 3 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Clayey, mixed, superactive, thermic, shallow Typic Durixeralfs

Typical Pedon

Fallager loam, on a south-facing slope of 1 percent, under a cover of goldfields, navarretia, ryegrass, brodiaea, Mediterranean barley, cowbag clover, popcorn flowers, and tarweed, at an elevation of 237 feet (72 m). When described on 3/27/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 3 cm); light reddish brown (5YR 6/3) loam, reddish brown (5YR 4/3) moist; 25 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; 40 percent medium irregular oxidized iron masses along faces of peds; 5 percent cobbles and 5 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt1—1 to 3 inches (3 to 8 cm); reddish yellow (5YR 6/6) gravelly clay loam, reddish brown (5YR 4/3) moist; 35 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; common very fine roots; common very fine tubular pores; 60 percent continuous distinct clay films; 15 percent fine spherical manganese masses throughout; 10 percent cobbles and 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

2Bt2—3 to 7 inches (8 to 18 cm); reddish brown (5YR 5/3) gravelly clay, reddish brown (5YR 4/3) moist; 43 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, very sticky, very plastic; common very fine roots; common very fine and fine tubular pores; 80 percent continuous distinct clay films; 15 percent fine irregular manganese masses throughout; 10 percent cobbles and 15 percent gravel; neutral, pH 6.7 by Hellige-Truog; abrupt smooth boundary.

3Bqm—7 inches (18 cm); very strongly cemented duripan; cemented by silica; 10 percent medium platy manganese masses at the top of the horizon; 20 percent cobbles and 60 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 1.1 miles east of the intersection of Highway 99 and Highway 149, approximately 1,350 feet south and 600 feet west of the northeast corner of sec. 6, T. 20 N., R. 3 E.; 39 degrees, 37 minutes, 18 seconds north latitude and 121 degrees, 40 minutes, 18 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

Depth to the duripan is 4 to 10 inches (10 to 25 cm). The duripan is underlain by volcanic sediments or volcanic sandstone and tuff. The mean annual soil temperature is 62 to 65 degrees F (17 to 18 degrees C). The particle-size control section averages 35 to 40 percent clay and 10 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and the surface of the soil from November through March. Redoximorphic features occur as oxidized iron and iron-manganese masses in the A, Bt, and 2Bt horizons and as an iron-manganese capping 1 to 3 mm thick on top of the 3Bqm horizon. Rock fragments on the surface range from 0 to 10 percent gravel and 0 to 25 percent cobbles.

The A horizon has dry color of 7.5YR 5/3, 6/4, or 6/6 or 5YR 6/3. Moist color is 7.5YR 4/3 or 5/4 or 5YR 4/3. Texture is loam, gravelly loam, cobbly loam, cobbly clay loam, or gravelly silty clay loam. The content of clay ranges from 20 to 30 percent. The horizon has 5 to 15 percent gravel and 0 to 10 percent cobbles. Reaction is slightly acid.

The Bt horizon has dry color of 7.5YR 5/3, 5/4, or 6/4 or 5YR 4/3, 5/4, or 6/6. Moist color is 5YR 3/3, 4/3, or 4/4 or 7.5YR 4/3. Texture is gravelly clay loam, clay loam,

cobbly clay loam, or silty clay loam. The content of clay ranges from 35 to 40 percent. The horizon has 5 to 15 percent gravel and 0 to 10 percent cobbles. Reaction is slightly acid or neutral.

The 2Bt horizon has dry color of 7.5YR 5/3 or 5/4, 5YR 5/3, or 10YR 5/3. Moist color is 5YR 4/3, 7.5YR 4/3, or 10YR 5/2. Texture is clay, gravelly clay, or very gravelly clay. The content of clay ranges from 40 to 60 percent. The horizon has 10 to 30 percent gravel and 0 to 15 percent cobbles. Reaction ranges from neutral to moderately alkaline.

Farwell Series

The Farwell series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on flood plains. Slopes range from 0 to 2 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Fluventic Haploxerepts

Typical Pedon

Farwell clay loam, on a slope of less than 1 percent, under a cover of beans, at an elevation of 145 feet (44 m). When described on 10/24/1988, the soil was moist below a depth of 10 inches (25 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 5 inches (0 to 13 cm); brown (10YR 5/3) clay loam, very dark grayish brown (10YR 3/2) moist; 29 percent clay; moderate very fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine and fine irregular pores; 2 percent fine gravel; slightly alkaline, pH 7.7 by pH meter 1:1 water; abrupt smooth boundary.

ABt—5 to 9 inches (13 to 23 cm); grayish brown (10YR 5/2) clay loam, dark grayish brown (10YR 4/2) moist; 29 percent clay; moderate fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine tubular pores; few thin clay films on faces of peds; 2 percent fine gravel; slightly alkaline, pH 7.5 by pH meter 1:1 water; clear smooth boundary.

Bt1—9 to 18 inches (23 to 46 cm); dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; 29 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine and common fine tubular pores; common thin clay films on faces of peds; 2 percent fine gravel; slightly alkaline, pH 7.4 by pH meter 1:1 water; clear smooth boundary.

Bt2—18 to 26 inches (46 to 66 cm); brown (10YR 5/3) clay loam, dark brown (10YR 3/3) and very dark brown (10YR 2/2) moist; 27 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine and common fine tubular pores; 2 percent fine gravel; common thin clay films on faces of peds; neutral, pH 7.2 by pH meter 1:1 water; clear smooth boundary.

Bt3—26 to 33 inches (66 to 84 cm); brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; 28 percent clay; moderate fine subangular blocky structure; slightly hard, friable, sticky, slightly plastic; few very fine roots; many very fine and common fine tubular pores; common thin clay films on faces of peds; 2 percent fine gravel; neutral, pH 7.3 by pH meter 1:1 water; clear smooth boundary.

2Btb1—33 to 43 inches (84 to 109 cm); light yellowish brown (10YR 6/4) clay loam, brown (10YR 4/3) moist; 35 percent clay; weak medium prismatic structure parting to moderate fine angular blocky; slightly hard, friable, sticky, plastic; few very fine and common fine roots; many very fine and few fine and medium tubular

pores; nearly continuous thin clay films on faces of peds; 2 percent fine gravel; neutral, pH 7.3 by pH meter 1:1 water; clear smooth boundary.

2Btb2—43 to 57 inches; (109 to 145 cm) light yellowish brown (10YR 6/4) clay loam, brown (10YR 4/3) moist; 34 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; common thin clay films on faces of peds; 2 percent fine gravel; slightly alkaline, pH 7.6 by pH meter 1:1 water; clear smooth boundary.

2Btb3—57 to 72 inches (145 to 183 cm); dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; 31 percent clay; massive; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; few thin clay films on faces of peds; 2 percent fine gravel; slightly alkaline, pH 7.5 by pH meter 1:1 water; clear smooth boundary.

3Bwb—72 to 81 inches (183 to 205 cm); dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; 20 percent clay; massive; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; few thin clay films on faces of peds; 2 percent fine gravel; slightly alkaline, pH 7.6 by pH meter 1:1 water.

Type location: Butte County, California; about 0.2 mile south of Wilson Landing Road, about 2 miles east of the west end of the road, approximately 175 feet south of the fourth power pole south of the road, 1,000 feet south and 2,500 feet west of the northwest corner of sec. 3, T. 22 N., R. 1 W.; in an unsectionized area in the Bosquejo Land Grant; 39 degrees, 47 minutes, 42 seconds north latitude and 121 degrees, 0 minutes, 2 seconds west longitude; NAD27; USGS Quad: Nord, California.

Range in Characteristics

Depth to the buried soil is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 60 to 62 degrees F (16 to 17 degrees C). The soil moisture control section is dry from about May 15 to October 31 (approximately 150 to 180 days). The particle-size control section averages 27 to 35 percent clay. Mineralogy is mixed. The content of organic matter decreases irregularly with increasing depth. The content of rock fragments is 0 to 5 percent. In some pedons the soils have no clay films.

The A or Ap horizon has dry color of 10YR 4/2, 4/3, 5/2, 5/3, or 6/3. Moist color is 10YR 2/2, 3/2, 3/3, or 4/3 or 7.5YR 3/2, 3/3, or 3/4. Texture is clay loam, loam, or silt loam. The content of clay ranges from 12 to 35 percent. The content of gravel is 0 to 2 percent. The content of organic matter is 1 to 2.5 percent. Reaction ranges from slightly acid to slightly alkaline.

The ABt horizon, the Bw horizon (where it occurs), and the Bt horizon have dry color of 10YR 5/2, 5/3, or 5/4 or 7.5YR 4/2 or 5/2. Moist color is 10YR 3/2, 3/3, or 4/3 or 7.5YR 3/2, 3/3, or 3/4. Texture is clay loam, silty clay loam, loam, or silt loam. The content of clay ranges from 20 to 35 percent. The content of gravel is 0 to 3 percent. The content of organic matter is 1 to 2.5 percent. Reaction ranges from neutral to moderately alkaline.

The 2Btb or Btb horizon has dry color of 10YR 3/2, 4/2, 5/2, or 5/3 or 7.5YR 5/2. Moist color is 10YR 3/2, 3/3, or 4/3 or 7.5YR 3/2, 3/3, or 3/4. Texture is clay loam or silty clay loam. The content of clay ranges from 27 to 40 percent. The content of gravel is 0 to 5 percent. The content of organic matter is 0.1 to 2 percent. Reaction is neutral or slightly alkaline.

The 3Bwb horizon, where it occurs, has dry color of 10YR 3/2, 4/2, 5/2, or 5/3 or 7.5YR 5/2. Moist color is 10YR 3/2, 3/3, 4/3, 4/4, or 5/4 or 7.5YR 3/2, 3/3, or 3/4. Texture is loam, silt loam, clay loam, or silty clay loam. The content of clay ranges from 20 to 30 percent. The content of gravel is 0 to 5 percent. The content of organic matter is 0.1 to 2 percent. The horizon is noneffervescent or slightly effervescent. Reaction is neutral or slightly alkaline.

Featherfalls Series

The Featherfalls series consists of very deep, well drained soils that formed in residuum and colluvium derived from coarse grained intrusive igneous rocks, mainly trondhjemite and quartz diorite. These soils are on ridgetops and side slopes on granitic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 58 inches (1,473 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Ultic Palexeralfs

Typical Pedon

Featherfalls sandy loam, on a northwest-facing slope of 28 percent, under a cover of conifers, hardwoods, and shrubs, at an elevation of 2,840 feet (866 m). When described on 7/14/1998, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed leaves, needles, and twig litter; abrupt smooth boundary.

A1—1 to 4 inches (3 to 10 cm); pale brown (10YR 6/3) sandy loam, brown (7.5YR 4/3) moist; 14 percent clay; moderate fine subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; many very fine roots; many very fine irregular pores; 10 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.0; abrupt smooth boundary.

A2—4 to 7 inches (10 to 18 cm); very pale brown (10YR 7/4) sandy loam, brown (7.5YR 5/4) moist; 18 percent clay; moderate fine subangular blocky structure; slightly hard, firm, slightly sticky, moderately plastic; common fine and medium roots; many very fine irregular pores; 2 percent mica flakes; 10 percent subrounded gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.8; clear smooth boundary.

Bt1—7 to 17 inches (18 to 43 cm); light brown (7.5YR 6/4) sandy clay loam, strong brown (7.5YR 4/6) moist; 24 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common fine and medium and few coarse roots; common very fine tubular pores; 5 percent discontinuous prominent clay films on faces of peds and in pores; 10 percent mica flakes; 10 percent subrounded gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.8; gradual smooth boundary.

Bt2—17 to 24 inches (43 to 61 cm); reddish yellow (7.5YR 7/6) sandy clay loam, yellowish red (5YR 4/6) moist; 29 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few medium and coarse roots; common very fine tubular pores; 60 percent discontinuous prominent clay films on faces of peds and in pores; 10 percent fine irregular black (N 2/0) iron-manganese masses; 20 percent mica flakes; 5 percent subrounded gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.

Bt3—24 to 32 inches (61 to 81 cm); reddish yellow (7.5YR 7/6) sandy clay loam, yellowish red (5YR 5/6) moist; 30 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine and medium roots; common very fine tubular pores; 60 percent discontinuous prominent clay films on faces of peds and in pores; 25 percent mica flakes; 5 percent subrounded gravel; moderately acid, pH 6.0 by Hellige-Truog; gradual smooth boundary.

Bt4—32 to 42 inches (81 to 107 cm); reddish yellow (7.5YR 7/6) sandy clay loam, strong brown (7.5YR 4/6) moist; 33 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine and

medium roots; common very fine tubular pores; 50 percent discontinuous prominent clay films on faces of peds and in pores; 25 percent mica flakes; moderately acid, pH 6.0 by Hellige-Truog; gradual smooth boundary.

BCt1—42 to 61 inches (107 to 155 cm); reddish yellow (7.5YR 7/6) paracobbly sandy clay loam, strong brown (7.5YR 4/6) moist; 34 percent clay; moderate medium subangular blocky structure; hard, very firm, moderately sticky, moderately plastic; few fine and medium roots; few very fine tubular pores; 80 percent continuous prominent clay films on faces of peds and in pores; 25 percent mica flakes; 33 percent paracobbles; moderately acid, pH 6.0 by Hellige-Truog; gradual smooth boundary.

BCt2—61 to 72 inches (155 to 183 cm); reddish yellow (7.5YR 7/6) paracobbly sandy clay loam, strong brown (7.5YR 4/6) moist; 33 percent clay; weak medium subangular blocky structure; hard, very firm, moderately sticky, moderately plastic; few fine and medium roots; few very fine tubular pores; 60 percent continuous prominent clay films on faces of peds and in pores; 10 percent mica flakes; 33 percent paracobbles; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Crt—72 to 80 inches (183 to 203 cm); pink (7.5YR 8/4) very paragravelly sandy clay loam, brown (7.5YR 5/4) moist; 25 percent clay; massive parting to weak medium subangular blocky structure; hard, very firm, slightly sticky, slightly plastic; few fine and medium roots; few very fine tubular pores; 50 percent discontinuous prominent clay films on faces of peds and in pores; 10 percent mica flakes; 45 percent paragravel; moderately acid, pH 6.0 by Hellige-Truog; rock structure is evident; slakes in water.

Type location: Butte County, California; about 0.8 mile north of Feather Falls, approximately 750 feet east and 200 feet north of the southeast corner of sec. 12, T. 20 N., R. 6 E.; 39 degrees, 36 minutes, 22 seconds north latitude and 121 degrees, 15 minutes, 26 seconds west longitude; NAD83; USGS Quad: Forbestown, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 53 to 59 degrees F (12 to 15 degrees C). The particle-size control section averages 20 to 27 percent clay and 0 to 25 percent rock fragments, mostly gravel. Mineralogy is mixed. NaF pH is less than 9.0 to 10.0 throughout the profile. Rock fragments on the surface range from 0 to 10 percent gravel and 0 to 25 percent boulders.

The A horizon has dry color of 10YR 5/3, 5/4, 6/3, 6/4, 7/2, 7/3, 7/4, or 8/3 or 7.5YR 6/4. Moist color is 10YR 3/2, 3/3, 4/2, 4/3, 4/4, 5/2, 5/4, or 6/4 or 7.5YR 3/3, 4/2, 4/3, 4/4, or 5/4. Texture is sandy loam, coarse sandy loam, loam, sandy clay loam, or gravelly coarse sandy loam. The content of clay ranges from 8 to 23 percent. The content of gravel is 0 to 30 percent. The content of organic matter is 1 to 4 percent. Reaction ranges from strongly acid to slightly acid.

The Bt horizon has dry color of 10YR 7/3, 7/4, 7/6, 8/3, or 8/4; 7.5YR 6/4, 6/6, or 7/6; or 5YR 5/4, 5/6, or 6/6. Moist color is 10YR 5/3, 5/4, 5/6, 6/6, or 7/4; 7.5YR 4/3, 4/4, 4/6, 5/6, 6/6, or 5/8; 5YR 4/4, 4/6, 5/6, or 5/8; or 2.5YR 4/6, 5/6, or 5/8. Texture is sandy clay loam, clay loam, loam, sandy loam, or gravelly sandy clay loam. The content of clay ranges from 16 to 33 percent. The content of gravel is 0 to 30 percent. The content of organic matter is 0.1 to 1.5 percent. Reaction ranges from strongly acid to neutral.

The BCt horizon has dry color of 10YR 8/4 or 7.5YR 5/4, 6/6, 7/6, or 8/2. Moist color is 10YR 7/6, 7.5YR 4/6 or 7/6, or 5YR 4/4 or 5/6. Texture is sandy clay loam, sandy clay, or paracobbly sandy clay loam. The content of clay ranges from 25 to 38 percent. The horizon has 0 to 10 percent gravel and 5 to 35 percent paracobbles. The

content of organic matter is 0 to 0.2 percent. Reaction is moderately acid or slightly acid.

The Crt horizon has dry color of 7.5YR 8/4 or 10YR 8/4. Moist color is 7.5YR 5/4 or 10YR 7/6. Texture is sandy clay loam, sandy loam, very paragravelly sandy clay loam, extremely paragravelly loamy coarse sand, or loamy coarse sand. The content of clay ranges from 2 to 27 percent. The content of paragravel is 0 to 70 percent. Reaction ranges from very strongly acid to moderately acid.

Fernandez Series

The Fernandez series consists of very deep, moderately well drained soils that formed in alluvium derived from metamorphic and igneous rocks. These soils are on intermediate terraces. Slopes range from 0 to 9 percent. The mean annual precipitation is about 24 inches (610 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Ultic Palexeralfs

Typical Pedon

Fernandez sandy loam, on a west-facing slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 190 feet (58 m). When described on 4/30/1997, the soil was dry to a depth of 18 inches (46 cm) and slightly moist from 18 to 73 inches (46 to 185 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/4) sandy loam, dark reddish brown (5YR 3/4) moist; 18 percent clay; strong thin platy structure parting to moderate fine subangular blocky; slightly hard, friable, nonsticky, slightly plastic; many very fine roots; few very fine tubular pores; 10 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt1—2 to 6 inches (5 to 15 cm); yellowish red (5YR 5/6) sandy clay loam, dark red (2.5YR 3/6) moist; 24 percent clay; strong medium subangular blocky structure; extremely hard, friable, slightly sticky, moderately plastic; common very fine roots; few very fine tubular pores; 10 percent clay films on all faces of peds; 10 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt2—6 to 18 inches (15 to 46 cm); yellowish red (5YR 5/6) sandy clay loam, dark reddish brown (2.5YR 3/4) moist; 28 percent clay; moderate medium subangular blocky structure parting to strong fine granular; slightly hard, firm, slightly sticky, moderately plastic; few very fine and fine roots; few fine and common very fine tubular pores; 10 percent clay films on faces of peds; 10 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt wavy boundary.

2Bt3—18 to 28 inches (46 to 71 cm); red (2.5YR 5/6) clay loam, dark reddish brown (2.5YR 3/4) moist; 38 percent clay; strong medium angular blocky structure; extremely hard, very firm, moderately sticky, very plastic; few very fine and fine roots; common very fine tubular pores; 40 percent clay films on faces of peds; 10 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

2Bt4—28 to 44 inches (71 to 112 cm); red (2.5YR 5/6) clay loam, reddish brown (2.5YR 4/4) moist; 38 percent clay; strong medium angular blocky structure; extremely hard, very firm, moderately sticky, very plastic; few fine roots; few fine and common very fine tubular pores; 50 percent clay films on faces of peds; 5 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

2Bt5—44 to 57 inches (112 to 145 cm); red (2.5YR 5/6) clay, dark red (2.5YR 3/6) moist; 42 percent clay; strong medium angular blocky structure; extremely hard,

very firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; 60 percent clay films on faces of peds; 5 percent fine distinct threadlike iron depletions having diffuse boundaries and lining pores; 10 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

2Bt6—57 to 65 inches (145 to 165 cm); red (2.5YR 5/6) gravelly clay, dark red (2.5YR 3/6) moist; 45 percent clay; strong medium subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; 40 percent clay films on faces of peds; 5 percent fine distinct threadlike iron depletions having diffuse boundaries and lining pores; 20 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

2Bt7—65 to 73 inches (165 to 185 cm); red (10R 5/6) gravelly clay loam, dark red (10R 3/6) moist; 37 percent clay; strong medium subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; 30 percent clay films on faces of peds; 20 percent very coarse distinct irregular iron depletions that have diffuse boundaries and are around rock fragments; 25 percent well rounded gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt wavy boundary.

3Btq—73 to 85 inches (185 to 216 cm); duripan; yellowish red (5YR 5/6) gravelly sandy loam, dark reddish brown (5YR 3/4) moist; 5 percent clay; massive; extremely hard, very firm, weakly cemented by silica, nonsticky, nonplastic; few very fine tubular pores; 20 percent clay films on rock fragments; 20 percent fine mica flakes throughout; 20 percent well rounded gravel; slightly acid, pH 6.2 by Hellige-Truog; does not slake in water after 2 hours; about 75 percent weakly cemented and 25 percent moderately cemented.

Type location: Butte County, California; about 6.43 miles southeast of Nelson, approximately 500 feet west and 2,700 feet south of the northeast corner of sec. 8, T. 19 N., R. 3 E.; 39 degrees, 30 minutes, 59 seconds north latitude and 121 degrees, 39 minutes, 8 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

Depth to a weakly cemented or moderately cemented duripan ranges from 60 to 80 inches (152 to 205 cm) or more, and depth to the 2Bt horizon ranges from 18 to 49 inches (46 to 124 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 20 to 35 percent clay and 0 to 20 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 40 inches (102 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 2 to 15 percent gravel.

The A horizon has dry color of 7.5YR 5/4, 5/6, or 6/4. Moist color is 5YR 3/3, 3/4, or 4/3 or 7.5YR 3/4 or 4/4. Texture is sandy loam, fine sandy loam, gravelly sandy loam, or gravelly loam. The content of clay ranges from 15 to 18 percent. The content of gravel is 5 to 20 percent. The content of organic matter is 0.5 to 1.2 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 5YR 5/6 or 6/6 or 7.5YR 6/4 or 6/6. Moist color is 2.5YR 3/4, 3/6, or 4/4; 5YR 3/4 or 4/4; or 7.5YR 3/4 or 4/4. Texture is sandy clay loam, gravelly sandy clay loam, loam, clay loam, or sandy loam. The content of clay ranges from 18 to 30 percent. The content of gravel is 5 to 33 percent. Redoximorphic features range from 0 to 20 percent soft oxidized iron masses and 0 to 5 percent soft manganese masses. The content of organic matter is 0.1 to 0.5 percent. Reaction ranges from moderately acid to neutral.

The 2Bt horizon has dry color of 2.5YR 4/8 or 5/6, 10R 5/6, 5YR 5/6 or 6/6, or 7.5YR 5/4, 6/6, or 7/6. Moist color is 2.5YR 3/4, 3/6, 4/4, or 4/6; 10R 3/6 or 4/6; 5YR 4/6; or 7.5YR 4/4 or 4/6. Texture is clay loam, clay, sandy clay, gravelly clay, or very

gravelly sandy clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 2 to 45 percent. Redoximorphic features range from 0 to 5 percent iron depletions, 0 to 15 percent soft oxidized iron masses, and 0 to 10 percent soft manganese masses. The content of organic matter is 0.1 to 0.5 percent. Reaction ranges from moderately acid to neutral.

Flagcanyon Series

The Flagcanyon series consists of moderately deep, moderately well drained soils that formed in alluvium derived from basalt. These soils are on alluvial fans on Table Mountain. Slopes range from 2 to 5 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Haplic Durixeralfs

Typical Pedon

Flagcanyon gravelly loam, on a west-facing slope of 4 percent, under a cover of olive trees, at an elevation of 380 feet (116 m). When described on 7/16/2001, the soil was dry to a depth of 30 inches (76 cm) and moist from 30 to 65 inches (76 to 165 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (10YR 4/3) gravelly loam, dark brown (10YR 3/3) moist; 18 percent clay; moderate fine subangular blocky structure; hard, friable, slightly sticky, slightly plastic; many very fine roots; many fine irregular pores; 10 percent subrounded cobbles and 20 percent subrounded basalt gravel; very strongly acid, pH 5.1 by Hellige-Truog; clear smooth boundary.

Bt1—3 to 9 inches (8 to 23 cm); brown (10YR 4/3) very gravelly loam, dark yellowish brown (10YR 3/4) moist; 25 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, slightly sticky, moderately plastic; common fine and medium roots between peds; common fine and medium irregular pores; 20 percent discontinuous faint clay films on surfaces along pores; 10 percent subrounded basalt cobbles and 30 percent subrounded basalt gravel; strongly acid, pH 5.5 by Hellige-Truog; clear wavy boundary.

Bt2—9 to 14 inches (23 to 36 cm); dark yellowish brown (10YR 4/4) very gravelly loam, dark yellowish brown (10YR 3/4) moist; 27 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine to coarse roots between peds; common very fine to medium and few coarse tubular pores; 30 percent discontinuous distinct clay films on surfaces along pores; 10 percent subrounded basalt cobbles and 40 percent subrounded basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

2Bt3—14 to 30 inches (36 to 76 cm); dark yellowish brown (10YR 4/4) very gravelly clay loam, dark yellowish brown (10YR 3/4) moist; 30 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common fine and medium roots around fragments; common fine and medium irregular pores; 40 percent discontinuous distinct clay films on surfaces along pores; 20 percent subrounded basalt cobbles and 40 percent subrounded basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt wavy boundary.

3Btq1—30 to 53 inches (76 to 135 cm); duripan; yellowish brown (10YR 5/4) extremely gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; 34 percent clay; moderate medium angular blocky structure; very hard, very firm, moderately cemented by silica, moderately sticky, moderately plastic; common very fine and fine roots around fragments; few fine irregular pores; 60 subrounded

basalt cobbles and 50 percent subrounded basalt gravel; neutral, pH 6.8 by Hellige-Truog; abrupt wavy boundary.

3Btq2—53 to 65 inches (135 to 165 cm); duripan; yellowish brown (10YR 5/4) extremely gravelly sandy clay, 40 percent dark yellowish brown (10YR 4/6) and 60 percent dark yellowish brown (10YR 4/4) moist; 36 percent clay; moderate medium angular blocky structure; very hard, very firm, moderately cemented by silica, moderately sticky, moderately plastic; few very fine roots around fragments; few very fine irregular pores; 45 percent continuous distinct clay films on rock fragments; 20 percent subrounded basalt cobbles and 60 percent subrounded basalt gravel; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 6.1 miles northwest of Oroville, approximately 1,000 feet east and 1,400 feet south of the northwest corner of sec. 14, T. 20 N., R. 3 E.; 39 degrees, 35 minutes, 34 seconds north latitude and 121 degrees, 36 minutes, 31 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 27 to 35 percent clay and 35 to 60 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 11 inches (28 cm) below the surface of the soil from December through April. Redoximorphic features, such as soft manganese masses with color of N 2/0, occur in the Bt and 2Bt horizons. Rock fragments on the surface range from 0 to 10 percent gravel and 0 to 15 percent cobbles.

The A horizon has dry color of 10YR 4/3 or 7.5YR 4/3 or 5/3. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/2 or 3/3. Texture is gravelly loam, loam, or fine sandy loam. The content of clay ranges from 15 to 22 percent. The horizon has 0 to 20 percent gravel and 0 to 10 percent cobbles. The content of organic matter is 4 to 8 percent. Reaction ranges from strongly acid to slightly acid.

The Bt horizon has dry color of 10YR 4/3, 4/4, or 5/3; 7.5YR 4/3, 4/4, or 5/3; or 5YR 4/4. Moist color is 10YR 3/4; 7.5YR 3/4, 4/2, 4/3, or 4/4; or 5YR 3/4. Texture is very gravelly loam, very gravelly clay loam, extremely gravelly clay loam, or gravelly loam. The content of clay ranges from 22 to 60 percent. The horizon has 15 to 60 percent gravel and 0 to 30 percent cobbles. The content of organic matter is 1 to 4 percent. Reaction ranges from strongly acid to neutral.

The 2Bt horizon has dry color of 10YR 4/3, 4/4, or 5/3; 7.5YR 4/3 or 4/4; or 5YR 4/4. Moist color is 10YR 3/4 or 4/3, 7.5YR 3/4 or 4/3, or 5YR 3/4. Texture is very gravelly clay loam, extremely gravelly clay loam, or extremely gravelly clay. The content of clay ranges from 35 to 50 percent. The horizon has 40 to 60 percent gravel and 0 to 20 percent cobbles. The content of organic matter is 1 to 2 percent. Reaction ranges from moderately acid to neutral.

The 3Btq horizon has dry color of 10YR 5/4, 5/6, 8/4, or 8/6 or 7.5YR 4/4. Moist color is 10YR 4/4, 4/6, or 7/6 or 7.5YR 3/4. Texture is extremely gravelly sandy clay loam or extremely gravelly sandy clay. The content of clay ranges from 22 to 50 percent. The horizon has 45 to 60 percent gravel and 20 to 40 percent cobbles. The horizon is slightly cemented or moderately cemented. The content of organic matter is 0.2 to 1 percent. Reaction ranges from neutral to moderately alkaline.

Flagcanyon Taxadjunct

The Flagcanyon taxadjunct consists of moderately deep, moderately well drained soils that formed in alluvium derived from basalt. These soils are on mounds on fan terraces. Slopes range from 0 to 5 percent. The mean annual precipitation is about 26

inches (660 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Haplic Durixeralfs

Typical Pedon

Flagcanyon taxadjunct fine sandy loam, on a southwest-facing slope of 2 percent, under a cover of annual grasses and forbs, at an elevation of 342 feet (104 m). When described on 5/8/2001, the soil was dry to a depth of 7 inches (0 to 18 cm), slightly moist from 7 to 31 inches (18 to 79 cm), and dry from 31 to 63 inches (79 to 160 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (7.5YR 4/3) fine sandy loam, dark brown (7.5YR 3/2) moist; 18 percent clay; moderate thick platy structure parting to moderate fine subangular blocky; slightly hard, friable, slightly sticky, nonplastic; many very fine roots; many very fine irregular pores; 10 percent very fine irregular oxidized iron masses throughout; 10 percent mixed gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt1—3 to 7 inches (8 to 18 cm); brown (7.5YR 4/3) loam, dark brown (7.5YR 3/2) moist; 24 percent clay; moderate medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; few fine tubular pores; 15 percent discontinuous distinct clay films on faces of peds; 10 percent mixed gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt2—7 to 16 inches (18 to 41 cm); brown (7.5YR 4/3) clay loam, dark reddish brown (5YR 3/2) moist; 29 percent clay; moderate medium subangular blocky structure; hard, firm, slightly sticky, moderately plastic; common very fine roots; common fine, few medium, and many very fine tubular pores; 40 percent discontinuous distinct clay films on faces of peds; 10 percent mixed gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

2Bt3—16 to 23 inches (41 to 58 cm); brown (10YR 5/3) very gravelly clay, brown (10YR 4/3) moist; 45 percent clay; moderate fine subangular blocky structure; very hard, very firm, very sticky, very plastic; few very fine roots; common very fine tubular pores; 60 percent continuous prominent clay films on faces of peds; 40 percent very fine irregular manganese masses throughout; 5 percent basalt cobbles and 50 percent basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual wavy boundary.

2Bt4—23 to 31 inches (58 to 79 cm); light yellowish brown (10YR 6/4) extremely gravelly clay, dark yellowish brown (10YR 4/4) moist; 50 percent clay; moderate fine subangular blocky structure; very hard, very firm, extremely weakly cemented, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; 80 percent continuous prominent clay films on faces of peds; 30 percent very fine irregular manganese masses around rock fragments; 5 percent basalt cobbles and 50 percent basalt gravel; neutral, pH 7.0 by Hellige-Truog; clear wavy boundary.

3Bq—31 to 63 inches (79 to 160 cm); extremely weakly cemented duripan; very pale brown (10YR 7/4) extremely gravelly sand, yellowish brown (10YR 5/4) moist; 2 percent clay; extremely weakly cemented by silica; 30 percent very fine irregular manganese masses around rock fragments; 20 percent basalt cobbles and 65 percent basalt gravel; neutral, pH 7.0 by Hellige-Truog;

Type location: Butte County, California; about 3.8 miles northwest of Oroville, approximately 350 feet west and 2,100 feet south of the northeast corner of sec. 26, T. 20 N., R. 3 E.; 39 degrees, 33 minutes, 42 seconds north latitude and 121 degrees, 35 minutes, 50 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). Depth to an indurated duripan is more than 40 inches (102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 28 to 35 percent clay and 20 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 0.5 to 1.5 percent in the A horizon and is less than 1 percent in the Bt and 2Bt horizons. A fluctuating water table can occur at a depth of 16 to 40 inches (41 to 102 cm) from December through April. Rock fragments on the surface range from 0 to 5 percent gravel.

The A horizon has dry color of 7.5YR 4/3 or 10YR 4/3, 4/4, or 5/3. Moist color is 7.5YR 3/2 or 3/3. Texture is fine sandy loam, loam, or gravelly fine sandy loam. The content of clay ranges from 15 to 18 percent. The content of gravel is 5 to 20 percent. Redoximorphic features range from 0 to 10 percent oxidized iron masses. Reaction is moderately acid.

The Bt horizon has dry color of 7.5YR 4/3 or 5/3 or 10YR 4/4 or 5/3. Moist color is 7.5YR 3/2, 3/3, or 4/3 or 5YR 3/2. Texture is loam, clay loam, gravelly loam, or gravelly clay loam. The content of clay ranges from 24 to 32 percent. The content of gravel is 5 to 30 percent. Reaction ranges from strongly acid to slightly acid.

The 2Bt horizon has dry color of 10YR 5/3, 6/3, or 6/4 or 7.5YR 5/3 or 5/4. Moist color is 10YR 4/3, 4/4, 5/3, or 5/4; 7.5YR 4/3; or 5YR 4/4. Texture is very gravelly clay, very gravelly clay loam, extremely gravelly sandy clay, or extremely gravelly clay. The content of clay ranges from 35 to 50 percent. The horizon has 45 to 65 percent gravel and 0 to 20 percent cobbles. Redoximorphic features range from 0 to 40 percent manganese masses. Reaction ranges from moderately acid to neutral.

The 3Bq horizon has dry color of 10YR 7/4 or 7.5YR 6/3. Moist color is 10YR 5/4 or 5/6 or 7.5YR 4/3. Texture is extremely gravelly sand or extremely gravelly coarse sand. The content of clay ranges from 2 to 5 percent. The horizon has 60 to 65 percent gravel and 10 to 20 percent cobbles. Redoximorphic features range 30 to 60 percent manganese masses. Reaction is slightly acid or neutral. Cementation ranges from extremely weak to strong.

The Flagcanyon taxadjunct in map unit 377 is a taxadjunct because it has a fine-loamy particle-size control section, whereas the Flagcanyon series is loamy-skeletal. The main limitation is depth to the duripan. The difference does not significantly affect the use, management, or interpretations of the soil.

Flanly Series

The Flanly series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from intrusive igneous rocks, mainly quartz diorite. These soils are on ridgetops and side slopes on Sierra Nevada foothills. Slopes range from 2 to 50 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Ultic Haploxeralfs

Typical Pedon

Flanly loam, on a north-facing slope of 8 percent, under a cover of blue oak and scattered foothill pine, whiteleaf manzanita, wild oat, annual fescue, and soft chess, at an elevation of 1,800 feet (549 m). When described on 6/11/2002, the soil was slightly moist below the surface layer. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); yellowish brown (10YR 5/4) loam, dark brown (10YR 3/3) moist; 14 percent clay; moderate very fine and fine subangular blocky structure; soft, very friable, nonsticky, slightly plastic; many very fine roots

throughout; many very fine and fine tubular pores; 5 percent fine spherical oxidized iron masses between peds; 3 percent subangular gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.

BA—2 to 5 inches (5 to 13 cm); dark yellowish brown (10YR 4/6) sandy loam, dark yellowish brown (10YR 3/4) moist; 15 percent clay; moderate very fine and fine subangular blocky structure; soft, very friable, nonsticky, slightly plastic; many very fine roots throughout; many very fine and fine tubular pores; 5 percent fine threadlike and 10 percent fine spherical oxidized iron masses; 3 percent subangular gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

Bt1—5 to 10 inches (13 to 25 cm); dark yellowish brown (10YR 4/6) sandy loam, dark yellowish brown (10YR 3/4) moist; 18 percent clay; strong very fine and fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and medium and many very fine roots throughout; many very fine and fine tubular pores; 10 percent patchy faint clay films on faces of peds; 2 percent subangular gravel; moderately acid, pH 6.1 by Hellige-Truog; clear wavy boundary.

Bt2—10 to 23 inches (25 to 58 cm); strong brown (7.5YR 4/6) sandy clay loam, dark brown (7.5YR 3/4) moist; 23 percent clay; strong fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and coarse and many very fine roots throughout; many very fine and fine tubular pores; 15 percent patchy distinct clay films on faces of peds; 5 percent subangular gravel; moderately acid, pH 6.1 by Hellige-Truog; clear wavy boundary.

Crt—23 to 26 inches (58 to 66 cm); moderately cemented quartz diorite bedrock; few very fine roots throughout; 15 percent patchy distinct clay films.

Type location: Butte County, California; about 2 miles northwest of Rackerby, approximately 2,500 feet north and 600 feet east of the southwest corner of sec. 31, T. 19 N., R. 6 E.; 39 degrees, 27 minutes, 38 seconds north latitude and 121 degrees, 21 minutes, 00 seconds west longitude; NAD83; USGS Quad: Rackerby, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 63 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about June through October (about 165 days). The particle-size control section averages 22 to 30 percent clay and 4 to 23 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 5 percent gravel, 0 to 3 percent cobbles, and 0 to 10 percent stones.

The A horizon has dry color of 10YR 4/4, 5/2, 5/3, 5/4, 5/6, or 6/4 or 7.5YR 4/4 or 5/6. Moist color is 10YR 3/2, 3/3, 3/4, or 4/4 or 7.5YR 3/4. Texture is loam or sandy loam. The content of clay ranges from 12 to 18 percent. The content of gravel is 3 to 15 percent. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 3 to 5 percent. Reaction ranges from slightly acid to very strongly acid.

The BA horizon has dry color of 10YR 4/4 or 4/6 or 7.5YR 4/6, 5/4, or 5/6. Moist color is 10YR 3/3 or 3/4 or 7.5YR 3/4. Texture is loam or sandy loam. The content of clay ranges from 15 to 20 percent. The content of gravel is 3 to 15 percent. The content of organic matter is 1 to 3 percent. By sum of cations, base saturation ranges from 60 to 70 percent. Reaction ranges from slightly acid to strongly acid.

The upper part of the Bt horizon has dry color of 10YR 4/6; 7.5YR 4/4, 4/6, 5/4, 5/6, 6/4, 5/8, 6/6, or 7/6; or 5YR 5/6 or 5/8. Moist color is 10YR 3/4, 7.5YR 3/4 or 4/6, or 5YR 3/4 or 4/6. Texture is loam, sandy loam, sandy clay loam, or clay loam. The content of clay ranges from 18 to 28 percent. The content of gravel is 2 to 15 percent.

The content of organic matter is 1 to 3 percent. By sum of cations, base saturation ranges from 60 to 74 percent. Reaction is moderately acid or slightly acid.

The lower part of the Bt horizon has dry color of 7.5YR 4/6 or 5/6 or 5YR 4/4, 5/6, or 5/8. Moist color is 7.5YR 3/4, 4/6, 4/4, or 5/6 or 5YR 4/4 or 4/6. Texture is loam, sandy clay loam, gravelly sandy clay loam, or clay loam. The content of clay ranges from 22 to 35 percent. The content of gravel is 3 to 20 percent. The content of organic matter is 0.5 to 2 percent. By sum of cations, base saturation ranges from 75 to 85 percent. Reaction ranges from moderately acid to neutral.

Flumewall Series

The Flumewall series consists of shallow, well drained soils that formed in residuum and colluvium derived from coarse grained metamorphic rocks, mainly metadiorite. These soils are on canyon side slopes on metamorphic Sierra Nevada mountains. Slopes range from 70 to 100 percent. The mean annual precipitation is about 74 inches (1,880 mm), and the mean annual air temperature is about 52 degrees F (11 degrees C).

Taxonomic class: Loamy-skeletal, isotic, mesic Lithic Haploxerults

Typical Pedon

Flumewall gravelly sandy loam, on an east-facing slope of 82 percent, under a cover of canyon live oak, Douglas-fir, sugar pine, and ponderosa pine, at an elevation of 3,320 feet (1,012 m). When described on 6/1/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); slightly decomposed plant material; abrupt smooth boundary.

A—0.5 inch to 2 inches (1 to 5 cm); light brown (7.5YR 6/4) gravelly sandy loam, brown (7.5YR 4/4) moist; 17 percent clay; moderate fine granular structure; soft, very friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine to medium irregular and tubular pores; 5 percent cobbles and 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.

Bt1—2 to 7 inches (5 to 17 cm); light brown (7.5YR 6/4) very gravelly sandy loam, brown (7.5YR 4/4) moist; 19 percent clay; weak fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many very fine to medium roots; many very fine to medium irregular and tubular pores; 20 percent discontinuous faint clay films; 10 percent cobbles and 25 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.

Bt2—7 to 18 inches (17 to 46 cm); light brown (7.5YR 6/4) very stony sandy clay loam, strong brown (7.5YR 4/6) moist; 22 percent clay; weak fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many very fine to coarse roots; many very fine to medium tubular and irregular pores; 20 percent discontinuous faint clay films; 20 percent cobbles, 20 percent stones, and 25 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.0; abrupt irregular boundary.

R—18 inches (46 cm); indurated metadiorite bedrock.

Type location: Butte County, California; about 0.68 mile east-northeast of Stirling City, approximately 1,000 feet south and 1,400 feet east of the northwest corner of sec. 27, T. 24 N., R. 4 E.; 39 degrees 54 minutes, 44 seconds north latitude and 121 degrees, 31 minutes, 2 seconds west longitude; NAD83; USGS Quad: Stirling City, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 47 to 55 degrees F (8 to 13 degrees C). The particle-size control section averages 14 to 27 percent clay and 35 to 75 percent rock fragments, mostly gravel. Mineralogy is isotic. NaF pH is 11 to 9.5 in the A and Bt horizons. Rock fragments on the surface range from 10 to 25 percent gravel, 0 to 25 percent cobbles, 0 to 15 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 7.5YR 6/3 or 6/4 or 10YR 6/3. Moist color is 7.5YR 4/3 or 4/4. Texture is gravelly fine sandy loam, gravelly sandy loam, cobbly fine sandy loam, or cobbly sandy loam. The content of clay ranges from 12 to 20 percent. The horizon has 15 to 80 percent gravel, 5 to 15 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders. Reaction is slightly acid or moderately acid.

The Bt horizon has dry color of 7.5YR 6/4 or 6/6 or 10YR 6/4. Moist color is 7.5YR 4/4 or 4/6, 10YR 5/4, or 5YR 4/6. Texture is gravelly fine sandy loam, very gravelly fine sandy loam, very gravelly sandy loam, very gravelly sandy clay loam, very stony sandy clay loam, or extremely stony sandy clay loam. The content of clay ranges from 14 to 27 percent. The horizon has 15 to 35 percent gravel, 10 to 25 percent cobbles, and 0 to 25 percent stones. Reaction ranges from slightly acid to strongly acid.

Fluvaquentic Humaquepts

Fluvaquentic Humaquepts consist of very deep, poorly drained soils that formed in alluvium derived from quartz diorite. These soils are in meadows in Sierra Nevada mountain valleys. Slopes range from 2 to 15 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 52 degrees F (11 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, mesic Fluvaquentic Humaquepts

Typical Pedon

Fluvaquentic Humaquepts very fine sandy loam, on a southwest-facing slope of 1 percent, under a cover of corn lily, rush, sedge, and arnica, at an elevation of 4,450 feet (1,356 m). When described on 9/23/1996, the soil was dry to a depth of 45 inches (114 cm) and very moist from 45 to 60 inches (114 to 152 cm). (Colors are for dry soil unless otherwise noted.)

A1—0 to 7 inches (0 to 18 cm); very dark grayish brown (10YR 3/2) very fine sandy loam, black (10YR 2/1) moist; 12 percent clay; weak very fine subangular blocky structure parting to moderate very fine granular; loose, very friable, nonsticky, nonplastic; many very fine roots; many very fine irregular pores; 2 percent mica flakes; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 10.0; abrupt smooth boundary.

A2—7 to 15 inches (18 to 38 cm); dark grayish brown (10YR 4/2) very fine sandy loam, black (10YR 2/1) moist; 15 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots; many very fine irregular pores; 2 percent mica flakes; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 11.0; clear smooth boundary.

Bw1—15 to 22 inches (38 to 56 cm); grayish brown (10YR 5/2) loam, black (10YR 2/1) moist; 20 percent clay; weak fine subangular blocky structure; soft, friable, nonsticky, slightly plastic; few very fine roots; common very fine tubular pores; 5 percent brown (7.5YR 4/4 moist) oxidized iron masses; 2 percent mica flakes; 2 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 11.5; clear smooth boundary.

Bw2—22 to 29 inches (56 to 74 cm); grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; 25 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; 5 percent brown (7.5YR 4/4 moist) oxidized iron masses; 2 percent mica flakes; 2 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 10.5; abrupt smooth boundary.

Bw3—29 to 36 inches (74 to 91 cm); very pale brown (10YR 7/3) loam, brown (10YR 4/3) moist; 25 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; 5 percent gray (10YR 5/1) iron depletions and 20 percent strong brown (7.5YR 4/8 moist) oxidized iron masses; 5 percent mica flakes; 5 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.0; abrupt smooth boundary.

2Bw—36 to 45 inches (91 to 114 cm); very pale brown (10YR 7/3) gravelly clay loam, brown (10YR 5/3) moist; 28 percent clay; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; common fine and few very fine tubular pores; 20 percent gray (10YR 5/1) iron depletions and 25 percent strong brown (7.5YR 4/8 moist) oxidized iron masses; 20 percent mica flakes; 20 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.5; abrupt smooth boundary.

2BC—45 to 60 inches (114 to 152 cm); white (10YR 8/1) gravelly loam, gray (10YR 6/1) moist; 25 percent clay; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; common fine, few medium, and few very fine tubular pores; 10 percent olive gray (5Y 5/2) iron depletions, 10 percent strong brown (7.5YR 4/6 moist) oxidized iron masses, and 60 percent gray (2.5Y 5/1 moist) iron depletions; 30 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.5.

Type location: Plumas County, California; about 1.5 miles southeast of Cascade, approximately 2,025 feet east and 2,200 feet south of the northwest corner of sec. 11, T. 21 N., R. 7 E.; 39 degrees, 41 minutes, 50 seconds north latitude and 121 degrees, 9 minutes, 4 seconds west longitude; NAD83; USGS Quad: Cascade, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm), and depth to the 2BC horizon is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 52 to 56 degrees F (11 to 13 degrees C). The particle-size control section averages 20 to 25 percent clay and 0 to 1 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 5 to 10 percent to a depth of 15 inches (38 cm). By ammonium acetate, base saturation is assumed to be 35 to 50 percent throughout the profile. A fluctuating water table can occur from the surface of the soil to a depth of 60 inches (152 cm) from November through August. Rock fragments on the surface range from 0 to 5 percent gravel.

The A horizon has dry color of 10YR 3/2 or 4/2. Moist color is 10YR 2/1 or 2/2. Texture is very fine sandy loam. The content of clay ranges from 12 to 15 percent. The content of gravel is 0 to 10 percent. NaF pH is 10.0 to 11.0. Reaction is moderately acid or strongly acid.

The Bw horizon has dry color of 10YR 5/2, 6/2, 7/2, or 7/3. Moist color is 10YR 2/1, 3/2, 3/3, 4/3, or 5/3. Texture is loam. The content of clay ranges from 20 to 25 percent. The content of gravel is 0 to 5 percent. Redoximorphic features occur as iron masses or iron depletions. NaF pH is 9.0 to 11.0. Reaction is moderately acid or strongly acid.

The 2Bw horizon has dry color of 10YR 6/3, 7/3, or 8/3. Moist color is 10YR 4/3, 5/3, or 6/3. Texture is gravelly clay loam. The content of clay ranges from 27 to 30 percent. Redoximorphic features occur as iron masses or iron depletions. NaF pH is 9.0 to 9.5. Reaction is moderately acid or strongly acid.

The 2BC horizon has dry color of 10YR 6/1, 7/1, or 8/1. Moist color is 10YR 5/1, 6/1, or 7/1. Texture is gravelly or very gravelly loam. The content of clay ranges from 20 to 27 percent. The content of gravel is 20 to 30 percent. Redoximorphic features occur as iron masses or iron depletions. NaF pH is 9.0 to 9.5. Reaction is moderately acid or strongly acid.

Fluvaquents, Loamy

Fluvaquents, loamy, consist of very deep, somewhat poorly drained soils that formed in alluvium derived from granitic and metamorphic rocks. These soils are on low terraces in Sierra Nevada mountain valleys. Slopes range from 0 to 3 percent. The mean annual precipitation is about 55 inches (1,397 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Mesic Fluvaquents

Typical Pedon

Fluvaquents, loamy, on a west-facing slope of 1 percent, under a cover of ponderosa pine, white alder, bigleaf maple, black willow, arroyo willow, blackberry, horsetail, bull thistle, and sedge, at an elevation of 2,018 feet (615 m). When described on 9/26/02, the soil was dry to a depth of 37 inches (94 cm), slightly moist from 37 to 45 inches (94 to 114 cm), very moist from 45 to 65 inches (114 to 165 cm), and saturated below 65 inches (165 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); slightly decomposed plant material; abrupt smooth boundary.

A1—0.5 inch to 2 inches (1 to 6 cm); pale brown (10YR 6/3) loam, very dark grayish brown (10YR 3/2) moist; 23 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few fine and common very fine roots; many very fine and fine irregular and tubular and common medium tubular pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

A2—2 to 9 inches (6 to 23 cm); light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; 21 percent clay; moderate medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; common very fine to medium tubular pores; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bw1—9 to 18 inches (23 to 46 cm); pale brown (10YR 6/3) sandy clay loam, dark grayish brown (10YR 4/2) moist; 20 percent clay; moderate medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium tubular pores; 20 percent fine and medium irregular strong brown (7.5YR 5/6 dry) oxidized iron masses infused into matrix adjacent to pores; slightly acid, pH 6.5 by Hellige-Truog; gradual wavy boundary.

Bw2—18 to 24 inches (46 to 61 cm); light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; 27 percent clay; moderate medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; 15 percent fine and medium threadlike yellowish red (5YR 5/6 dry) oxidized iron masses infused into matrix adjacent to pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

C1—24 to 27 inches (61 to 69 cm); light brownish gray (10YR 6/2) sandy loam, dark grayish brown (10YR 4/2) moist; 15 percent clay; massive; slightly hard, very friable, slightly sticky, nonplastic; few very fine to medium roots; many very fine and fine tubular and irregular and common medium tubular pores; 10 percent fine and medium irregular strong brown (7.5YR 5/6 dry) oxidized iron masses infused

into matrix adjacent to pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

C2—27 to 37 inches (69 to 94 cm); grayish brown (2.5Y 5/2) silt loam, dark grayish brown (2.5Y 4/2) moist; 18 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; 10 percent fine and medium irregular yellowish brown (10YR 5/6 dry) oxidized iron masses infused into matrix adjacent to pores; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Agb1—37 to 45 inches (94 to 114 cm); gray (2.5Y 6/1) loam, very dark gray (10YR 3/1) moist; 20 percent clay; massive; moderately hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium tubular pores; 10 percent fine threadlike strong brown (7.5YR 4/6 moist) oxidized iron masses infused into matrix adjacent to pores; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Agb2—45 to 65 inches (114 to 165 cm); gray (2.5Y 6/1) sandy clay loam, dark gray (2.5Y 4/1) moist; 25 percent clay; massive; moderately hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine tubular pores; 5 percent fine threadlike strong brown (7.5YR 4/6 moist) oxidized iron masses infused into matrix adjacent to pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Agb3—65 to 70 inches (165 to 178 cm); gray (2.5Y 6/1) sandy loam, dark gray (2.5Y 4/1) moist; 16 percent clay; massive; slightly hard, friable, slightly sticky, nonplastic; common very fine roots; common very fine tubular pores; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

2Cg—70 to 85 inches (178 to 216 cm); gray (2.5Y 6/1) sandy clay loam, dark gray (2.5Y 4/1) moist; 28 percent clay; massive; moderately hard, friable, moderately sticky, moderately plastic; common very fine roots; common very fine tubular pores; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Butte County, California; about 0.25 mile east of Concow Reservoir, approximately 700 feet south and 1,720 feet west of the northeast corner of sec. 15, T. 22 N., R. 4 E.; 39 degrees, 45 minutes, 59 seconds north latitude and 121 degrees, 30 minutes, 41 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 50 to 55 degrees F (10 to 13 degrees C). The soil moisture control section is dry in all parts from about August to October (about 90 days). The particle-size control section averages 12 to 27 percent clay and 0 to 15 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur at a depth of 10 to 59 inches (25 to 150 cm) from December through June and at a depth of 47 to 67 inches (10 to 170 cm) from July through November. Redoximorphic features, such as soft iron masses with color of 7.5YR 5/6 and 4/6, occur throughout the profile. Rock fragments on the surface range from 0 to 15 percent gravel.

The A horizon has dry color of 10YR 6/2 or 6/3. Moist color is 10YR 3/2 or 4/2. Texture is loam or fine sandy loam. The content of clay ranges from 12 to 27 percent. The content of gravel is 0 to 15 percent. Reaction is slightly acid or neutral.

The Bw horizon has dry color of 10YR 6/2 or 6/3. Moist color is 10YR 4/2 or 4/3. Texture is sandy clay loam, silt loam, loam, fine sandy loam, or sandy loam. The content of clay ranges from 12 to 27 percent. The content of gravel is 0 to 15 percent. Reaction is slightly acid or neutral.

The C horizon has dry color of 10YR 5/2 or 6/2 or 2.5Y 5/2. Moist color is 10YR 4/2 or 2.5Y 4/2. Texture is sandy loam, silt loam, fine sandy loam, or loam. The content of

clay ranges from 10 to 20 percent. The content of gravel is 0 to 15 percent. Reaction is slightly acid or neutral.

The Abg horizon has dry color of 2.5Y 5/1 or 6/1. Moist color is 10YR 3/1 or 4/1 or 2.5Y 4/1. Texture is loam, sandy clay loam, sandy loam, or fine sandy loam. The content of clay ranges from 12 to 27 percent. The content of gravel is 0 to 15 percent. Reaction is slightly acid or neutral.

The 2Cg horizon has dry color of 2.5Y 6/1 or 5/1. Moist color is 2.5Y 4/1 or 5/1. The horizon is sandy clay loam, loam, sandy loam, or the gravelly analogs of those textures. The content of clay ranges from 5 to 30 percent. The content of gravel is 0 to 35 percent. Reaction is slightly acid or neutral.

Galt Series

The Galt series consists of moderately deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in basins, drainageways, and swales on low terraces. Slope ranges from 0 to 2 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Aquic Durixererts

Typical Pedon

Galt clay, on a slope of 2 percent, under a cover of wild oat, filaree, ryegrass, and hayfield tarweed, at an elevation of 175 feet (53 m). When described on 5/18/89, the soil was dry to a depth of 24 inches (61 cm) and moist below that depth. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches (0 to 8 cm); very dark grayish brown (10YR 3/2) clay, very dark grayish brown (10YR 3/2) moist; 45 percent clay; strong very fine subangular blocky structure; extremely hard, friable, very sticky, very plastic; many very fine and common fine roots; common very fine tubular pores; 2 percent mixed gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

A2—3 to 13 inches (8 to 33 cm); very dark grayish brown (10YR 3/2) clay, very dark grayish brown (10YR 3/2) moist; 50 percent clay; strong fine to coarse angular blocky structure; extremely hard, firm, very sticky, very plastic; many very fine and common fine roots; common very fine tubular pores; common discontinuous pressure faces; 2 percent mixed gravel; slightly alkaline, pH 7.5 by Hellige-Truog; gradual smooth boundary.

Bss—13 to 29 inches (33 to 74 cm); very dark grayish brown (10YR 3/2) clay, very dark grayish brown (10YR 3/2) moist; 55 percent clay; strong medium and coarse angular blocky structure; extremely hard, firm, very sticky, very plastic; common very fine roots; many very fine tubular pores; common intersecting slickensides; nearly continuous pressure faces; 2 percent mixed gravel; slightly alkaline, pH 7.5 by Hellige-Truog; gradual smooth boundary.

Bkss—29 to 32 inches (74 to 81 cm); dark brown (7.5YR 3/2) clay, dark brown (7.5YR 3/2) moist; 55 percent clay; moderate medium subangular blocky structure; extremely hard, firm, very sticky, very plastic; few very fine roots; many very fine tubular pores; common intersecting slickensides; common fine rounded soft lime masses; strongly effervescent (HCl, 1 normal); 2 percent mixed gravel; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

2Bkqm—32 to 39 inches (81 to 99 cm); indurated duripan; cemented by silica; carbonates in seams.

Type location: Butte County, California; about 0.3 mile east of Soto Lake, approximately 1,000 feet north and 3,100 feet west of the southwest corner of sec. 5,

T. 23 N. R. 1 W.; in an unsectionized area in the Bosquejo Land Grant; 39 degrees, 52 minutes, 20 seconds north latitude and 122 degrees, 1 minute, 21 seconds west longitude; NAD27; USGS Quad: Foster Island, California.

Range in Characteristics

Depth to the duripan ranges from 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from about late June to October (about 160 days). The particle-size control section averages 45 to 55 percent clay. Mineralogy is smectitic. Reversible, surface-initiated cracks 1.25 inches (3 cm) wide extend from the surface to the duripan. The depth to carbonates ranges from 0 to 32 inches (0 to 81 cm). A fluctuating water table can occur between the top of the duripan and the surface of the soil from December through May. Rock fragments on the surface range from 0 to 10 percent gravel.

The A horizon has dry color of 10YR 3/2, 4/2, or 4/3. Moist color is 10YR 3/2, 3/3, 4/2, or 5/2 or 7.5YR 3/2, 3/3, or 4/2. Texture is clay, silty clay, gravelly clay, or clay loam. The content of clay ranges from 30 to 60 percent. The horizon has 0 to 25 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 1 to 2 percent. Reaction ranges from slightly acid to slightly alkaline.

The Bss horizon has dry color of 10YR 3/2, 3/3, 4/2, or 4/3. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/2, 3/3, 3/4, 4/2, or 4/4. Texture is clay, gravelly clay, cobbly clay, silty clay, or clay loam. The content of clay ranges from 38 to 60 percent. The horizon has 0 to 30 percent gravel and 0 to 15 percent cobbles. The content of organic matter is 0.2 to 0.8 percent. Reaction is neutral or slightly alkaline.

The Bkss horizon has dry color of 10YR 4/1 or 4/2 or 7.5YR 3/2. Moist color is 10YR 4/2 or 7.5YR 3/2, 4/2, 4/3, or 4/4. Texture is clay, gravelly clay, silty clay, or clay loam. The content of clay ranges from 37 to 60 percent. The content of gravel is 0 to 25 percent. The content of organic matter is 0.2 to 0.8 percent. Reaction ranges from neutral to moderately alkaline.

The Bw horizon, where it occurs, has dry color of 10YR 4/1 or 4/2 or 7.5YR 3/2. Moist color is 10YR 4/2 or 7.5YR 3/2, 4/2, 4/3, or 4/4. Texture is clay loam, sandy clay loam, loam, or sandy loam. The content of clay ranges from 15 to 37 percent. The content of gravel is 0 to 15 percent. The content of organic matter is 0.2 to 0.8 percent. Reaction is slightly alkaline.

Galt Taxadjunct

The Galt taxadjunct consists of moderately deep, somewhat poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in channels and swales on terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 16 inches (406 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Durixerepts

Typical Pedon

Galt taxadjunct clay loam, under a cover of annual grasses and tules, at an elevation of 54 feet (16 m). (Colors are for dry soil unless otherwise noted.)

Ak1—0 to 5 inches (0 to 13 cm); light brownish gray (10YR 6/2) clay loam, dark brown (10YR 3/3) moist; strong fine granular structure; hard, friable, sticky, plastic; many very fine and fine and few medium tubular pores; disseminated lime; 8 percent calcium carbonate equivalent; slightly effervescent; neutral; clear way boundary.

Ak2—5 to 13 inches (12 to 33 cm); pale brown (10YR 6/3) clay loam, dark brown (10YR 3/3) moist; strong medium subangular blocky structure; hard, friable,

sticky, plastic; common very fine roots; many very fine and fine and few medium tubular pores; disseminated lime; 8 percent calcium carbonate equivalent; slightly effervescent; moderately alkaline; clear smooth boundary.

Bk1—13 to 17 inches (33 to 43 cm); light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; strong medium subangular blocky structure; hard, friable, sticky, plastic; common very fine roots; many very fine and fine and few medium tubular pores; disseminated lime; 7 percent calcium carbonate equivalent; strongly effervescent; moderately alkaline; abrupt smooth boundary.

Bk2—17 to 21 inches (43 to 53 cm); very pale brown (10YR 7/3) clay loam, brown (10YR 5/3) moist; massive; hard, friable, slightly sticky, slightly plastic; common very fine roots; few very fine tubular pores; disseminated lime; 41 percent calcium carbonate equivalent; violently effervescent; moderately alkaline; abrupt smooth boundary.

2Bkqm—21 to 22 inches (53 to 56 cm); white (10YR 8/2) duripan, light brownish gray (10YR 6/2) moist; massive; extremely hard; continuous laminar bands of silica and calcium carbonate; alternating seams of lime; violently effervescent; abrupt smooth boundary.

2Bk—22 to 25 inches (56 to 64 cm); very pale brown (10YR 8/3) loam, very pale brown (10YR 7/3) moist; massive; slightly hard; very friable, nonsticky, nonplastic; disseminated lime; 43 percent calcium carbonate equivalent; violently effervescent; moderately alkaline; abrupt smooth boundary.

2B´kqm—25 to 26 inches (64 to 66 cm); white (10YR 8/2) duripan, light gray (10YR 7/2) moist; massive; extremely hard; continuous laminar bands of silica and calcium carbonate; alternating seams of lime; violently effervescent; abrupt smooth boundary.

3Cd—26 to 60 inches (66 to 152 cm); white (10YR 8/2) densic material, light olive brown (2.5Y 5/4) moist; massive; very hard, extremely firm; disseminated lime; violently effervescent.

Type location: Sutter County, California; about 4.7 miles west of Pennington, approximately 2,700 feet east and 350 feet south of the northwest corner of sec. 32, T. 17 N., R. 1 E.; 39 degrees, 17 minutes, 16 seconds north latitude and 121 degrees, 52 minutes, 53 seconds west longitude; NAD27; USGS Quad: Sanborn Slough, California.

Range in Characteristics

Depth to an indurated duripan ranges from 20 to 35 inches (51 to 89 cm). The mean annual soil temperature is 62 to 65 degrees F (17 to 18 degrees C). The particle-size control section ranges from 27 to 35 percent clay. Mineralogy is mixed. The soils are calcareous throughout. The content of organic matter is less than 1 percent throughout the profile. A fluctuating water table can occur from the top of the duripan to 12 inches (30 cm) below the surface of the soil from December through April.

The Ak horizon has dry color of 10YR 6/2 or 6/3. Moist color is 10YR 3/2, 3/3, or 4/3. Texture is clay loam. The content of clay ranges from 27 to 35 percent. Reaction ranges from neutral to moderately alkaline.

The Bk horizon has dry color of 10YR 6/2, 6/3, 7/3, or 6/4. Moist color is 10YR 5/3, 4/3, 4/4, 3/3, or 3/2. Texture is clay loam. The content of clay ranges from 27 to 35 percent. Reaction ranges from neutral to moderately alkaline.

The Galt taxadjunct is a taxadjunct because it has less clay than is described as the range for the series and because the duripan is underlain by dense silt deposits. These differences do not significantly affect the use, management, or interpretations of the soils.

Gianella Series

The Gianella series consists of very deep, moderately well drained soils that formed in overbank river alluvium derived from mixed rock sources. These soils are on flood plains within the meander belt. Slopes are 0 to 1 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C)

Taxonomic class: Coarse-loamy, mixed, superactive, nonacid, thermic Typic Xerofluvents

Typical Pedon

Gianella silt loam, on a slope of less than 1 percent, in a walnut orchard, at an elevation of 160 feet (49 m). When described on 10/27/1988, the soil was moist throughout (irrigated). The water table was at a depth of more than 80 inches (203 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); pale brown (10YR 6/3) silt loam, dark grayish brown (10YR 4/2) moist; 11 percent clay; weak thick platy structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular and common very fine irregular pores; slightly acid, pH 6.6 by pH meter 1:1 water; abrupt smooth boundary.

C1—2 to 8 inches (5 to 20 cm); grayish brown (10YR 5/2) loamy fine sand, very dark grayish brown (10YR 3/2) moist; 4 percent clay; single grain; loose, nonsticky, nonplastic; few very fine roots; common very fine interstitial and few very fine tubular pores; slightly acid, pH 6.6 by pH meter 1:1 water; clear smooth boundary.

C2—8 to 15 inches (20 to 38 cm); light yellowish brown (10YR 6/4) fine sandy loam, dark brown (10YR 3/3) moist; 8 percent clay; single grain; soft, very friable, slightly sticky, nonplastic; few medium roots; common very fine interstitial and few very fine tubular pores; neutral, pH 6.7 by pH meter 1:1 water; abrupt smooth boundary.

C3—15 to 22 inches (38 to 56 cm); light yellowish brown (10YR 6/4) very fine sandy loam, dark yellowish brown (10YR 3/4) moist; 6 percent clay; single grain; soft, very friable, nonsticky, nonplastic; few medium roots; common very fine interstitial and few very fine tubular pores; neutral, pH 6.7 by pH meter 1:1 water; clear smooth boundary.

C4—22 to 31 inches (56 to 79 cm); light brownish gray (2.5Y 6/2) very fine sandy loam, dark grayish brown (2.5Y 4/2) moist; 5 percent clay; single grain; soft, very friable, nonsticky, nonplastic; few medium roots; common very fine interstitial and few very fine tubular pores; neutral, pH 6.8 by pH meter 1:1 water; clear smooth boundary.

C5—31 to 41 inches (79 to 104 cm); pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; 8 percent clay; single grain; soft, very friable, slightly sticky, slightly plastic; few medium and coarse roots; common very fine tubular pores; 2 percent fine faint very dark brown (10YR 2/2 moist) and grayish brown (10YR 5/2 dry) iron depletions; slightly acid, pH 6.6 by pH meter 1:1 water; clear smooth boundary.

C6—41 to 50 inches (104 to 127 cm); brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; 14 percent clay; massive; slightly hard, very friable, slightly sticky, slightly plastic; few fine and medium roots; common fine and medium tubular pores; 25 percent wormcasts; neutral, pH 6.7 by pH meter 1:1 water; clear smooth boundary.

C7—50 to 54 inches (127 to 137 cm); pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; 14 percent clay; massive; slightly hard, very friable, slightly sticky,

slightly plastic; few fine roots; common very fine and fine tubular pores; neutral, pH 6.8 by pH meter 1:1 water; clear smooth boundary.

C8—54 to 64 inches (137 to 163 cm); light yellowish brown (10YR 6/4) silt loam, brown (10YR 4/3) moist; 13 percent clay; massive; slightly hard, very friable, slightly sticky, slightly plastic; common fine and medium tubular pores; 1 percent fine prominent strong brown (7.5YR 5/6 moist) oxidized iron masses and 4 percent coarse distinct very dark gray (10YR 3/1 moist) iron depletions; neutral, pH 6.9 by pH meter 1:1 water; abrupt smooth boundary.

C9—64 to 66 inches (163 to 168 cm); light brownish gray (10YR 6/2) silt loam, brown (10YR 4/3) moist; 12 percent clay; massive; slightly hard, very friable, slightly sticky, slightly plastic; common fine tubular pores; neutral, pH 6.8 by pH meter 1:1 water; abrupt smooth boundary.

C10—66 to 69 inches (168 to 174 cm); light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; 10 percent clay; massive; slightly hard, very friable, slightly sticky, slightly plastic; common very fine and fine tubular pores; neutral, pH 7.1 by pH meter 1:1 water; abrupt smooth boundary.

C11—69 to 83 inches (174 to 210 cm); pale brown (10YR 6/3) loamy fine sand, brown (10YR 4/3) moist; 5 percent clay; single grain; loose, nonsticky, nonplastic; many very fine and fine interstitial pores; neutral, pH 7.1 by pH meter 1:1 water.

Type location: Butte County, California; about 5.7 miles northwest of Nord, on Snaden Island, approximately 2,700 feet west and 400 feet south of the west end of Bennett Road; in an unsectionized area in the Bosquejo Land Grant; T. 23 N., R. 2 W.; 39 degrees, 48 minutes, 13 seconds north latitude and 122 degrees, 3 minutes, 19 seconds west longitude; NAD27; USGS Quad: Foster Island, California.

Range in Characteristics

The soils are very deep and stratified. The mean annual soil temperature is 60 to 62 degrees F (16 to 17 degrees C). The particle-size control section averages 10 to 18 percent clay and has more than 15 percent fine sand or coarser sand. Mineralogy is mixed. The soils are noncalcareous throughout. The content of organic matter decreases irregularly with increasing depth. It ranges from 4.0 at the surface to 0.34 percent to a depth of 83 inches (211 cm). A fluctuating water table can occur at a depth of 33 to more than 80 inches (83 to 203 cm) from December through March. Redoximorphic features, such soft oxidized iron masses with color of 7.5YR 4/4 or 4/6 moist, may occur at a depth as high as 18 inches (46 cm). Also, they may occur in the A horizon, especially if the horizon has platy structure. Rock fragments on the surface range from 0 to 20 percent gravel. Some pedons have an Ab horizon, commonly with textures of silt loam or loam. Some pedons have a gravelly substratum.

The A and Ap horizons have dry color of 10YR 5/3, 6/3, or 5/4. Moist color is 10YR 3/2, 3/3, 4/2, or 4/3 or 2.5Y 3/3. Texture is silt loam, fine sandy loam, sandy loam, or loam. The content of clay ranges from 4 to 22 percent. Reaction ranges from moderately acid to moderately alkaline.

The C horizon has dry color of 10YR 5/2, 5/3, 5/4, 6/3, or 6/4 or 2.5Y 6/2. Moist color is 10YR 3/2, 4/2, 3/3, 3/4, 4/3, 4/4, or 5/2 or 2.5Y 4/2 or 4/3. Texture is loam, silt loam, fine sandy loam, very fine sandy loam, loamy sand, loamy fine sand, coarse sandy loam, sand, or sandy loam. The content of clay ranges from 1 to 15 percent. Reaction ranges from slightly acid to moderately alkaline.

Govstanford Series

The Govstanford series consists of very deep, somewhat poorly drained soils that formed in hydraulic mine sediment over basin clays. These soils are on flood plains and on alluvial fans above flood basins. Slopes are 0 to 1 percent. The mean annual

precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Coarse-loamy over clayey, mixed over smectitic, superactive, nonacid, thermic Oxyaquic Xerofluvents

Typical Pedon

Govstanford loam, on a slope of less than 1 percent, under a cover of almond trees, at an elevation of 139 feet (42 m). When described on 11/22/1993, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Ap1—0 to 3 inches (0 to 8 cm); pale brown (10YR 6/3) loam, dark brown (10YR 3/3) moist; 17 percent clay; moderate medium platy structure parting to moderate medium subangular and moderate fine granular; moderately hard, firm, nonsticky, slightly plastic; many very fine roots; few fine tubular pores; slightly acid, pH 6.5 pH by Hellige-Truog; clear smooth boundary.

Ap2—3 to 11 inches (8 to 28 cm); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; 21 percent clay; weak fine subangular blocky structure; hard, very firm, slightly sticky, slightly plastic; common very fine to medium and few coarse roots; few fine tubular pores; neutral, pH 6.8 by pH Hellige-Truog; clear wavy boundary.

C1—11 to 18 inches (28 to 46 cm); light yellowish brown (10YR 6/4) sandy loam, brown (10YR 4/3) moist; 5 percent clay; weak medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; many fine, common very fine and medium, and few coarse roots; few fine tubular and common fine interstitial pores; neutral, pH 7.0 pH by Hellige-Truog; clear smooth boundary.

C2—18 to 25 inches (46 to 64 cm); yellowish brown (10YR 5/4) silt loam, brown (10YR 4/3) moist; 13 percent clay; weak medium subangular blocky structure; hard, very firm, nonsticky, nonplastic; few very fine and fine roots; common irregular tubular and irregular pores; slightly alkaline, pH 7.5 pH by Hellige-Truog; clear smooth boundary.

C3—25 to 34 inches (64 to 86 cm); yellowish brown (10YR 5/4) silt loam, brown (10YR 4/3) moist; 9 percent clay; weak medium subangular blocky structure; hard, very firm, nonsticky, nonplastic; few very fine, fine, and coarse roots; common very fine and fine tubular pores; common fine distinct brown (7.5YR 4/4 moist) threadlike soft oxidized iron masses and common fine faint dark grayish brown (10YR 4/2 moist) irregularly shaped soft iron depletions; slightly alkaline, pH 7.5 pH by Hellige-Truog; abrupt smooth boundary.

2Assg—34 to 42 inches (86 to 107 cm); black (10YR 2/1) clay, black (10YR 2/1) moist; 56 percent clay; moderate fine subangular blocky structure; extremely hard, slightly rigid, very sticky, very plastic; few very fine and medium roots; few fine tubular pores; common intersecting slickensides; slightly alkaline, pH 7.5 pH by Hellige-Truog; clear smooth boundary.

2Bssg1—42 to 61 inches (107 to 155 cm); very dark gray (10YR 3/1) silty clay, very dark brown (10YR 2/2) moist; 56 percent clay; moderate medium subangular blocky structure; extremely hard, slightly rigid, very sticky, very plastic; few very fine and fine roots; few fine tubular pores; many intersecting slickensides; moderately alkaline, pH 8.0 pH by Hellige-Truog; clear smooth boundary.

2Bssg2—61 to 72 inches (155 to 183 cm); very dark grayish brown (10YR 3/2) silty clay, very dark grayish brown (10YR 3/2) moist; 52 percent clay; moderate medium subangular blocky structure; extremely hard, slightly rigid, very sticky, very plastic; few fine tubular pores; common intersecting slickensides; moderately alkaline, pH 8.0 pH by Hellige-Truog.

Type location: Butte County, California; about 2.3 miles south of Durham, approximately 200 feet north of where the old Sacramento Northern Railroad crossed Butte Creek and 100 feet west of the old tracks; in an unsectionized area in the

Esquon Land Grant; 39 degrees, 37 minutes, 0 seconds north latitude and 121 degrees, 46 minutes, 38 seconds west longitude; NAD27; USGS Quad: Nelson, California.

Range in Characteristics

Depth to the lithologic discontinuity is 20 to 36 inches (51 to 91 cm). The mean annual soil temperature is 62 to 66 degrees F (17 to 19 degrees C). The soil moisture control section is dry from June to October (120 to 150 days). The particle-size control section averages 4 to 17 percent clay in the coarse-loamy material and 40 to 60 percent clay in the clayey material. Mineralogy is mixed in the coarse-loamy material and smectitic in the clayey material. The content of organic matter is 1 to 2 percent to a depth of 11 inches (28 cm). Common or many intersecting slickensides occur in the 2Assg and 2Bssg horizons, from 34 to 72 inches (86 to 183 cm). A fluctuating water table can occur at a depth of 20 to 72 inches (51 to 183 cm) from December through April. In some pedons oxidized iron masses, iron-manganese concretions, and manganese masses occur in the underlying basin material.

The Ap horizon has dry color of 10YR 5/3, 6/2, or 6/3. Moist color is 10YR 3/3, 4/2, or 4/3. Texture is loam, fine sandy loam, or sandy loam. The content of clay ranges from 15 to 27 percent. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the C horizon has dry color of 10YR 6/2, 6/3, 6/4, 7/2, or 7/3. Moist color is 10YR 4/2, 4/3, 4/4, 5/2, 5/3, or 5/4. Texture is sand, loamy sand, sandy loam, fine sandy loam, loam, or silt loam. The content of clay ranges from 3 to 18 percent. Reaction ranges from neutral to moderately alkaline.

The lower part of the C horizon has dry color of 10YR 6/2, 6/3, 6/4, 7/2, or 7/3. Moist color is 10YR 4/2, 4/3, 4/4, 5/2, 5/3, or 5/4. Texture is sand, loamy sand, sandy loam, fine sandy loam, loam, silt loam, or silt. The content of clay ranges from 5 to 18 percent. Redoximorphic features, such as oxidized iron masses with color of 7.5YR 3/4, 4/4, or 4/6 moist and iron depletions with color of 10YR 4/2 moist, occur in pores and on faces of peds in this part of the C horizon. Reaction ranges from neutral to moderately alkaline.

The 2Assg horizon has dry color of 10YR 2/1, 3/1, 4/1, 5/1, or 4/2. Moist color is 10YR 2/1, 3/1, 4/1, or 3/2. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. Reaction ranges from neutral to moderately alkaline.

The 2Bssg horizon has dry color of 10YR 2/2, 3/2, 4/1, 5/1, 5/2, or 6/2. Moist color is 10YR 3/1, 3/2, 4/1, or 4/2. Texture is silty clay, clay, or silty clay loam. The content of clay ranges from 35 to 55 percent. Reaction ranges from neutral to moderately alkaline.

Greenwell Series

The Greenwell series consists of moderately deep, well drained soils that formed in tephra over colluvium and residuum derived from volcanic mudflow. These soils are on lahar over narrow basalt plateaus in volcanic Sierra Nevada mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Medial, amorphic, frigid Humic Haploxerands

Typical Pedon

Greenwell medial sandy loam, on a northwest-facing slope of 17 percent, under a cover of mixed conifers and shrubs, at an elevation of 4,975 feet (1,516 m). When described on 12/16/1996, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); slightly decomposed needles and twigs; abrupt smooth boundary.

Oe—2 to 3 inches (5 to 8 cm); moderately decomposed needles and twigs; abrupt smooth boundary.
A1—3 to 5 inches (8 to 13 cm); brown (10YR 5/3) medial sandy loam, dark brown (7.5YR 3/2) moist; 8 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; few fine and common very fine roots; common very fine irregular and few very fine vesicular pores; 5 percent subrounded andesite gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 12.0; abrupt smooth boundary.
A2—5 to 10 inches (13 to 26 cm); brown (10YR 5/3) medial sandy loam, dark brown (10YR 3/3) moist; 10 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; few fine and medium and common very fine roots; common very fine irregular pores; 10 percent subrounded andesite gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 11.7; abrupt smooth boundary.
Bw—10 to 18 inches (26 to 46 cm); light yellowish brown (10YR 6/4) gravelly medial sandy loam, dark brown (10YR 3/3) moist; 12 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many fine and medium, few coarse, and common very fine roots; common very fine irregular pores; 16 percent subrounded andesite gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 11.5; clear smooth boundary.
2BC1—18 to 23 inches (46 to 59 cm); very pale brown (10YR 7/3) medial sandy loam, brown (10YR 4/3) moist; 18 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine and medium and few coarse roots; common very fine irregular pores; 5 percent subrounded andesite cobbles; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 11.0; gradual wavy boundary.
2BC2—23 to 32 inches (59 to 82 cm); very pale brown (10YR 7/3) very gravelly medial sandy loam, brown (10YR 4/3) moist; 18 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; few fine and common medium and coarse roots on top of the horizon; common very fine irregular pores; 5 percent subangular andesite cobbles and 40 percent subangular andesite gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 10.7; abrupt smooth boundary.
2Cr—32 inches (82 cm); moderately cemented volcanic mudflow bedrock imbedded with well rounded andesite gravel and cobbles; few fine roots in cracks more than 10 inches (25 cm) apart.

Type location: Plumas County, California; about 2.1 miles south of Camel Peak Lookout, approximately 2,050 feet west and 1,400 feet north of the southeast corner of sec. 8, T. 21 N., R. 8 E.; 39 degrees, 41 minutes, 18 seconds north latitude and 121 degrees, 6 minutes, 26 seconds west longitude; NAD83; USGS Quad: American House, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The particle-size control section averages 10 to 18 percent clay and 0 to 34 percent rock fragments, mostly gravel. Mineralogy is amorphic. The content of organic matter is 4 to 35 percent to a depth of 32 inches (81 cm). By ammonium acetate, base saturation ranges from 10 to 35 percent to a depth of 32 inches (81 cm). Rock fragments on the surface range from 0 to 5 percent gravel, 0 to 5 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 10YR 3/2, 3/3, 4/2, 5/2, or 5/3. Moist color is 10YR 2/1, 3/2, or 3/3 or 7.5YR 3/2. Texture is medial sandy loam or gravelly medial sandy

loam. The content of clay ranges from 8 to 11 percent. The content of gravel is 0 to 25 percent. NaF pH is 9 to 12. Reaction ranges from very strongly acid to slightly acid.

The Bw horizon has dry color of 10YR 4/3, 5/3, 6/3, or 6/4 or 7.5YR 4/2, 4/3, 5/3, or 6/3. Moist color is 10YR 3/3 or 4/3; 7.5YR 3/2, 3/3, or 4/2; or 5YR 3/2. Texture is medial sandy loam, gravelly medial sandy loam, or gravelly medial coarse sandy loam. The content of clay ranges from 10 to 15 percent. The horizon has 0 to 25 percent gravel and 0 to 5 percent cobbles. NaF pH is 11.0 to 11.5. Reaction ranges from very strongly acid to slightly acid.

The 2BC horizon has dry color of 10YR 5/4 or 7/3 or 7.5YR 4/3 or 6/3. Moist color is 10YR 4/3 or 7.5YR 3/3 or 4/3. Texture is medial sandy loam, gravelly medial sandy loam, very gravelly medial coarse sandy loam, or very gravelly medial sandy loam. The content of clay ranges from 12 to 18 percent. The horizon has 0 to 60 percent gravel and 0 to 10 percent cobbles. NaF pH is 10.5 to 11.0. Reaction is very strongly acid or strongly acid.

Gridley Series

The Gridley series consists of moderately deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on low terraces and basin rims. Slopes are 0 to 1 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Typic Argixerolls

Typical Pedon

Gridley clay loam, on a slope of less than 1 percent, in an irrigated prune orchard, at an elevation of 67 feet (21 m). When described on 4/5/1979, the soil was moist throughout. (Colors are for dry soil unless otherwise noted).

Ap—0 to 9 inches (0 to 23 cm); brown (10YR 5/3) clay loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium angular blocky structure; very hard, friable, sticky, plastic; common very fine and fine roots; common very fine and fine tubular pores; neutral, pH 7.0; clear smooth boundary.

A—9 to 19 inches (23 to 48 cm); brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; moderate medium angular blocky structure; very hard, friable, sticky, plastic; few very fine roots; common very fine tubular pores; slightly alkaline, pH 7.5; gradual wavy boundary.

Bt1—19 to 28 inches (48 to 71 cm); brown (10YR 5/3) clay, dark yellowish brown (10YR 3/4) moist; moderate coarse subangular blocky structure; extremely hard, firm, very sticky, very plastic; few very fine roots, common very fine and fine tubular pores; few thin clay films on faces of peds and in pores; slightly alkaline, pH 7.5; gradual wavy boundary.

Bt2—28 to 37 inches (71 to 94 cm); yellowish brown (10YR 5/4) clay, dark yellowish brown (10YR 3/4) moist; moderate coarse subangular blocky structure; extremely hard, firm, very sticky, very plastic; few very fine roots; common very fine and fine tubular pores; common pressure faces on peds; slightly alkaline, pH 7.5; clear wavy boundary.

2Cr—37 to 62 inches (94 to 157 cm); very pale brown (10YR 7/4) siltstone, yellowish brown (10YR 5/4) moist; common fine strong brown (7.5YR 4/6) oxidized iron masses lining pores; common moderately thick clay films on fracture faces; slightly alkaline, pH 7.5.

Type location: Sutter County, California; about 2.1 miles north of Yuba City, approximately 950 feet south and 250 feet east of the northeast corner of sec. 4, T. 15

N., R. 3 E.; in an unsectionized area in the New Helvetia Land Grant; 39 degrees, 11 minutes, 14 seconds north latitude and 121 degrees, 37 minutes, 59 seconds west longitude; NAD27; USGS Quad: Sutter, California.

Range in Characteristics

The depth to paralithic contact ranges from 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The soil temperature is above 47 degrees F (8 degrees C) the entire year. Unless irrigated, the soils are dry in all parts between depths of 6 and 17 inches (15 and 43 cm) from June through October and is moist in some or all parts from November through May. Reaction is neutral to moderately alkaline. Some pedons have a calcareous C horizon above the 2Cr horizon.

The A horizon has dry color of 10YR 5/3 or 5/2 or 7.5YR 5/2. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/2. The content of clay ranges from 27 to 35 percent. Reaction ranges from neutral to moderately alkaline.

The Bt horizon has dry color of 10YR 6/3, 5/3, 6/4, or 5/4 or 7.5YR 6/4. Moist color is 10YR 3/2, 3/3, 3/4, 4/3, 4/4, or 5/4 or 7.5YR 3/2, 3/3, 4/4, or 4/6. Texture is clay loam, clay, or silty clay. The content of clay ranges from 35 to 55 percent.

Gridley Taxadjunct

The Gridley taxadjunct consists of moderately deep, somewhat poorly drained soils that formed alluvium derived from mixed rock sources. These soils are on terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Typic Durixerolls

Typical Pedon

Gridley taxadjunct clay loam, on a slope of 0 to 2 percent, under a cover of annual grasses and forbs, at an elevation of 70 feet (21 m). When described on 8/25/1988, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 4 inches (0 to 10 cm); dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; 28 percent clay; moderate medium subangular blocky structure parting to weak medium granular; very hard, friable, moderately sticky, moderately plastic; few fine and common very fine roots; many very fine tubular pores; 10 percent fine dark yellowish brown (10YR 3/6 dry) iron-manganese masses throughout; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bt1—4 to 9 inches (10 to 23 cm); dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; 38 percent clay; strong fine and medium angular blocky structure; extremely hard, firm, moderately sticky, moderately plastic; few fine and common very fine roots; many very fine tubular pores; 30 percent distinct clay films on faces of peds; 2 percent fine iron-manganese nodules and 10 percent very fine iron-manganese masses; 2 percent rounded gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bt2—9 to 15 inches (23 to 38 cm); brown (10YR 5/3) clay loam, very dark grayish brown (10YR 3/2) moist; 36 percent clay; strong fine and strong medium and coarse subangular blocky structure; extremely hard, firm, moderately sticky, moderately plastic; few very fine and fine roots; many very fine tubular pores; 10 percent slickensides; 21 percent prominent clay films on faces of peds and in pores; 2 percent fine iron-manganese nodules and 20 percent very fine iron-

manganese masses; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

Btk—15 to 21 inches (38 to 53 cm); pale brown (10YR 6/3) clay loam, dark brown (10YR 3/3) moist; 34 percent clay; moderate fine and medium subangular blocky structure; extremely hard, firm, moderately sticky, moderately plastic; few very fine and fine roots; many very fine tubular pores; 25 percent clay films; 1 percent very fine iron-manganese masses and 2 percent fine iron-manganese nodules; 2 percent medium spherical carbonate concretions; strong effervescence; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

2Bkqm—21 to 60 inches (53 to 152 cm); moderately cemented duripan; very pale brown (10YR 8/2) coarse sandy loam, pale brown (10YR 6/3) moist; 5 percent clay; massive; rigid, moderately cemented by silica, nonsticky, nonplastic; 10 percent very fine threadlike carbonate masses; strong effervescence; moderately alkaline, pH 8.0 by Hellige-Truog; indurated laminar capping, 3 mm thick, cemented by silica; violent effervescence on top of the capping.

Type location: Butte County, California; about 2.7 miles east of Graylodge Wildlife Area headquarters, approximately 1,200 feet west and 2,300 feet north of the southeast corner of sec. 18, T. 17 N., R. 2 E.; 39 degrees, 19 minutes, 28 seconds north latitude and 121 degrees, 47 minutes, 6 seconds west longitude; NAD27; USGS Quad: Pennington, California.

Range in Characteristics

Depth to the duripan ranges from 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from about May to October (about 150 days). The particle-size control section averages 35 to 40 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 3 percent to a depth of 9 inches (23 cm) and 0 to 1 percent from 9 to 20 inches (23 to 51 cm). The depth to carbonates ranges from 5 to 24 inches or more (13 to 61 cm). Electrical conductivity ranges from 0 to 2 mmhos/cm throughout the profile. Reversible, surface-initiated cracks 0.5 to 1 inch (1 to 2.5 cm) wide extend to a depth of 16 inches (41 cm) or more. A fluctuating water table can occur between the top of the duripan and 5 inches (13 cm) below the surface of the soil from December to April. Redoximorphic features, such as iron-manganese masses and iron-manganese nodules with color of N 2/0, 10YR 5/1, 5Y 5/1, or 5G 5/1, occur in all horizons.

The A horizon has dry color of 10YR 4/1, 4/2, 4/3, 5/1, 5/2, or 5/3 or 7.5YR 5/2. Moist color is 10YR 3/1, 3/2, or 3/3 or 7.5YR 3/2. Texture is loam or clay loam. The content of clay ranges from 25 to 30 percent. Reaction ranges from neutral to moderately alkaline.

The Bt horizon has dry color of 10YR 5/2, 5/3, 6/3, 5/4, 6/4, or 7/4 or 7.5YR 6/4. Moist color is 10YR 3/2, 3/3, 4/4, or 4/6. Texture is clay loam, silty clay loam, or clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 0 to 2 percent. Reaction ranges from neutral to moderately alkaline.

The Btk horizon has dry color of 10YR 6/3, 7/2, 7/3, or 8/2. Moist color is 10YR 3/3, 4/2, 4/3, 4/4, or 5/2. Texture is clay loam or clay. The content of clay ranges from 30 to 50 percent. Effervescence ranges from slight to strong. Reaction is slightly alkaline or moderately alkaline.

The 2Bkqm horizon has dry color of 10YR 6/2, 7/2, 7/3, 8/2, or 8/3. Moist color is 10YR 6/3, 6/6, or 7/3. Texture is coarse sandy loam, loam, or loamy coarse sand. The content of clay ranges from 5 to 20 percent. Rupture resistance ranges from indurated in the upper part of the horizon to weakly cemented or moderately cemented in the lower part. The indurated laminar cap is $^{1}/_{16}$ to $^{1}/_{4}$ inch (1 to 6 mm) thick.

The Gridley taxadjunct is a taxadjunct because it has a duripan rather than siltstone. This difference does not significantly affect the use, management, or interpretations of the soils.

Griffgulch Series

The Griffgulch series consists of deep, well drained soils that formed in residuum and colluvium derived from metavolcanic rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 56 inches (1,422 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Clayey-skeletal, mixed, active, mesic Ultic Haploxeralfs

Typical Pedon

Griffgulch very gravelly silt loam, on a southwest-facing slope of 47 percent, under a cover of ponderosa pine, canyon live oak, whiteleaf manzanita, Pacific poison oak, buckbrush, and deerbrush, at an elevation of 2,460 feet (750 m). When described on 10/16/1997, the soil was dry to a depth of 33 inches (84 cm) and slightly moist from 33 to 58 inches (84 to 147 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); pine needles, twigs, and leaves.

Oe—2 to 3 inches (5 to 8 cm); partially decomposed pine needles, twigs, and leaves.

A—3 to 7 inches (8 to 18 cm); reddish yellow (7.5YR 6/6) very gravelly silt loam, reddish brown (5YR 4/4) moist; 26 percent clay; strong fine and medium granular structure; slightly hard, friable, nonsticky, slightly plastic; many very fine to medium roots; many very fine to coarse vesicular and tubular pores; noneffervescent; 35 percent gravel and 15 percent cobbles; moderately acid, pH 5.9 by pH meter 1:1 water; gradual smooth boundary.

Bt1—7 to 11 inches (18 to 28 cm); reddish yellow (7.5YR 6/6) very cobbly silty clay loam, reddish brown (5YR 4/4) moist; 27 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; many very fine to medium roots; many very fine to medium and few coarse vesicular and tubular pores; few faint discontinuous clay films on faces of peds; noneffervescent; 20 percent gravel and 20 percent cobbles; moderately acid, pH 5.9 by pH meter 1:1 water; gradual smooth boundary.

Bt2—11 to 20 inches (28 to 51 cm); reddish yellow (5YR 6/6) extremely cobbly silty clay loam, yellowish red (5YR 4/6) moist; 32 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine to coarse roots; many very fine and common fine and medium vesicular and tubular pores; common distinct continuous clay films on faces of peds; noneffervescent; 30 percent gravel, 30 percent cobbles, and 10 percent stones; moderately acid, pH 6.0 by pH meter 1:1 water; gradual smooth boundary.

Bt3—20 to 33 inches (51 to 84 cm); reddish yellow (5YR 6/6) very cobbly silty clay, yellowish red (5YR 4/6) moist; 41 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to coarse roots; many very fine and fine and common medium vesicular and tubular pores; many prominent continuous clay films on faces of peds; noneffervescent; 15 percent gravel, 30 percent cobbles, and 10 percent stones; moderately acid, pH 5.9 by pH meter 1:1 water; gradual smooth boundary.

Bt4—33 to 47 inches (84 to 119 cm); reddish yellow (5YR 6/6) very cobbly clay, yellowish red (5YR 4/6) moist; 46 percent clay; moderate medium subangular blocky structure; slightly hard, friable, very sticky, very plastic; common very fine to coarse roots; many very fine and fine and common medium tubular pores; many prominent continuous clay films on faces of peds; noneffervescent; 15

percent gravel, 15 percent cobbles, and 10 percent stones; moderately acid, pH 5.9 by pH meter 1:1 water; clear smooth boundary.

Bt5—47 to 58 inches (119 to 147 cm); reddish yellow (5YR 6/6) extremely gravelly clay, yellowish red (5YR 4/6) moist; 46 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to coarse roots; common very fine to medium tubular pores; many prominent continuous clay films on faces of peds; noneffervescent; 30 percent gravel, 20 percent cobbles, and 20 percent stones; moderately acid, pH 6.0 by pH meter 1:1 water; abrupt wavy boundary.

R—58 inches (147 cm); very strongly cemented metavolcanic bedrock.

Type location: Butte County, California; about 1.5 miles south-southeast of Sawmill Peak, approximately 2,150 feet north and 2,050 feet west of the southeast corner of sec. 5, T. 22 N., R. 4 E.; 39 degrees, 47 minutes, 27.1 seconds north latitude and 121 degrees, 33 minutes, 3.1 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 53 to 59 degrees F (12 to 15 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 35 to 45 percent clay and 35 to 70 percent rock fragments. Mineralogy is mixed. Rock fragments on the surface range from 10 to 30 percent gravel, 0 to 20 percent cobbles, 0 to 15 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 5YR 5/4, 6/4, or 7/4 or 7.5YR 6/6 or 6/4. Moist color is 5YR 3/3, 4/3, or 4/4. The horizon is silt loam, loam, or the gravelly or very gravelly analogs of those textures. The content of clay ranges from 18 to 27 percent. The horizon has 10 to 45 percent gravel, 0 to 25 percent cobbles, and 0 to 15 percent stones. Reaction is moderately acid or slightly acid.

The upper part of the Bt horizon has dry color of 2.5YR 5/6 or 6/6, 5YR 6/6 or 7/6, or 7.5YR 6/6. Moist color is 2.5YR 4/6 or 5YR 4/3, 4/4, or 4/6. Texture is gravelly clay loam, very cobbly clay loam, very cobbly silty clay loam, or extremely cobbly silty clay loam. The content of clay ranges from 27 to 35 percent. The content of gravel is 15 to 35 percent, the content of cobbles is 5 to 35 percent, and the content of stones is 0 to 15 percent. Reaction is moderately acid or slightly acid.

The lower part of the Bt horizon has dry color of 2.5YR 5/6 or 6/6 or 5YR 6/6, 6/8, or 7/6. Moist color is 2.5YR 4/6 or 5YR 4/6, 5/6, 5/8, or 6/8. Texture is very gravelly clay loam, cobbly clay loam, very cobbly clay loam, extremely gravelly clay, very cobbly clay, or very cobbly silty clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 15 to 35 percent, the content of cobbles is 10 to 40 percent, and the content of stones is 10 to 20 percent. Reaction is moderately acid or slightly acid.

Hamslough Series

The Hamslough series consists of moderately deep, poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are in channels on low stream terraces and strath terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Clayey-skeletal, smectitic, thermic Typic Petraquepts

Typical Pedon

Hamslough clay, on a south-facing slope of less than 1 percent, under a cover of ryegrass, spike rush, and coyote thistle, at an elevation of 191 feet (58 m). When

described on 4/10/2000, the soil was slightly moist to a depth of 3 inches (8 cm) and moist from 3 to 55 inches (8 to 140 cm). (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches (0 to 8 cm); dark gray (7.5YR 4/1) clay, dark brown (7.5YR 3/2) moist; 50 percent clay; moderate medium and coarse subangular blocky structure; very hard, friable, very sticky, very plastic; many very fine roots; few very fine and fine tubular and irregular pores; 20 percent fine threadlike strong brown (7.5YR 5/6) oxidized iron masses on surfaces along root channels; 5 percent gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

A2—3 to 14 inches (8 to 36 cm); dark gray (7.5YR 4/1) cobbly clay, brown (7.5YR 4/2) moist; 50 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, very sticky, very plastic; common very fine roots; few very fine and fine tubular pores; 10 percent gravel and 15 percent cobbles; slightly alkaline, pH 7.5 by Hellige-Truog; abrupt smooth boundary.

Bw—14 to 19 inches (36 to 48 cm); light brown (7.5YR 6/3) extremely gravelly clay, brown (7.5YR 5/3) moist; 50 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, very sticky, very plastic; common very fine roots; few very fine and fine tubular pores; 15 percent cobbles and 50 percent gravel; slightly alkaline, pH 7.8 by Hellige-Truog; gradual smooth boundary.

Bg—19 to 27 inches (48 to 69 cm); light brownish gray (2.5Y 6/2) extremely gravelly sandy clay, grayish brown (2.5Y 5/2) moist; 50 percent clay; weak fine subangular blocky structure; very hard, friable, very sticky, very plastic; few very fine roots; few very fine and fine tubular pores; 15 percent medium irregular brown (7.5YR 5/4) oxidized iron masses in the matrix; 20 percent cobbles and 50 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

2Bqm—27 to 55 inches (69 to 140 cm); reddish yellow (7.5YR 7/6), strongly cemented duripan, brown (7.5YR 5/4) moist; massive; extremely hard, firm, strongly cemented by silica; few very fine and fine tubular and irregular pores; strongly alkaline, pH 8.5 by Hellige-Truog.

Type location: Butte County, California; about 1.7 miles south of the Neal Road Landfill, approximately 100 feet north and 1,750 feet west of the southeast corner of sec. 23, T. 21 N., R. 2 E.; 39 degrees, 39 minutes, 16 seconds north latitude and 121 degrees, 43 minutes, 6 seconds west longitude; NAD83; USGS Quad: Hamlin Canyon, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 66 degrees F (17 to 19 degrees C). The particle-size control section averages 45 to 55 percent clay and 35 to 60 percent rock fragments, mostly gravel. Mineralogy is smectitic. Reversible, surface-initiated cracks 0.25 to 1 inch (0.6 to 3 cm) wide extend to a depth of 14 inches (36 cm) from 150 to 180 days when the soils are not irrigated. A fluctuating water table can occur between a depth of 60 inches (152 cm) and the surface of the soil from December through May. Redoximorphic features, such as soft oxidized iron masses with color of 7.5YR 5/4 or 5/6, occur throughout the profile. Rock fragments on the surface range from 0 to 20 percent gravel and 0 to 25 percent cobbles. Some pedons have a Bss horizon.

The A horizon has dry color of 7.5YR 4/1, 4/2, or 5/2 or 10YR 5/1. Moist color is 7.5YR 3/2 or 4/2 or 10YR 4/1. Texture is clay, gravelly clay, or cobbly clay. The content of clay ranges from 40 to 60 percent. The horizon has 5 to 15 percent gravel and 0 to 15 percent cobbles. Reaction is neutral or slightly alkaline.

The Bw horizon has dry color of 7.5YR 5/2, 6/3, or 7/4 or 10YR 4/1. Moist color is 7.5YR 4/2, 4/3, 5/3, or 5/4 or 10YR 4/1. Texture is clay, gravelly clay, very gravelly clay, or extremely gravelly clay. The content of clay ranges from 40 to 60 percent. The

horizon has 10 to 50 percent gravel and 0 to 25 percent cobbles. Reaction is slightly alkaline or moderately alkaline.

The Bg horizon has dry color of 2.5Y 6/2 or 10YR 4/1. Moist color is 2.5Y 5/2 or 10YR 4/1. Texture is extremely gravelly clay, extremely gravelly sandy clay, cobbly clay, or very gravelly sandy clay loam. The content of clay ranges from 30 to 60 percent. The horizon has 20 to 50 percent gravel and 15 to 25 percent cobbles. Reaction is moderately alkaline or strongly alkaline.

Haplic Palexeralfs

Haplic Palexeralfs consist of very deep, moderately well drained soils that formed in alluvium derived from basalt and mixed sediments. These soils are on low stream terraces. Slopes range from 0 to 5 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs

Typical Pedon

Haplic Palexeralfs, on a west-facing slope of 5 percent, under a cover of annual grasses, forbs, and scattered willow and valley oak, at an elevation of 380 feet (115 m). When described on 6/3/2001, the soil was dry to a depth of 45 inches (114 cm) and slightly moist from 45 to 64 inches (114 to 163 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; 18 percent clay; moderate fine subangular blocky structure parting to moderate fine granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine roots; many fine irregular pores; 10 percent subrounded basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.

Bt1—3 to 9 inches (8 to 23 cm); brown (10YR 5/3) very gravelly loam, very dark grayish brown (10YR 3/2) moist; 22 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, slightly plastic; many very fine and fine and common medium roots; common fine and medium irregular pores; 10 percent discontinuous faint clay films on surfaces along pores; 10 percent subrounded basalt cobbles and 25 percent subrounded basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.

Bt2—9 to 22 inches (23 to 56 cm); brown (10YR 5/3) very gravelly clay loam, brown (7.5YR 4/2) moist; 30 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common medium and coarse roots; common fine and medium tubular pores; 15 percent discontinuous faint clay films on surfaces along pores; 10 percent subrounded basalt cobbles and 35 percent subrounded basalt gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.

2Bt3—22 to 31 inches (56 to 79 cm); pale brown (10YR 6/3) extremely gravelly sandy clay, brown (7.5YR 4/2) moist; 38 percent clay; moderate medium subangular blocky structure; very hard, firm, moderately sticky, moderately plastic; common medium roots; common fine tubular pores; 15 percent discontinuous faint clay films on surfaces along pores; 20 percent subrounded basalt cobbles and 45 percent subrounded basalt gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.

2Bt4—31 to 45 inches (79 to 114 cm); yellowish brown (10YR 5/4) extremely gravelly sandy clay loam, brown (7.5YR 4/3) moist; 35 percent clay; moderate coarse subangular blocky structure; very hard, very firm, moderately sticky, moderately plastic; few medium roots; common fine tubular pores; 15 percent discontinuous

distinct clay films on surfaces along pores; 15 percent subrounded basalt cobbles, 25 percent subrounded basalt gravel, and 25 percent subrounded basalt stones; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.

2Bt5—45 to 52 inches (114 to 132 cm); brown (10YR 5/3) extremely gravelly sandy clay, brown (7.5YR 4/3) moist; 39 percent clay; moderate medium subangular blocky structure; hard, firm, very sticky, moderately plastic; few fine and medium roots; common fine tubular pores; 50 percent discontinuous prominent clay films on surfaces along pores; 2 percent fine irregular brown (7.5YR 4/4 dry) oxidized iron masses and 10 percent fine irregular black (N 2/0 dry) manganese masses; 10 percent subrounded basalt cobbles, 15 percent subrounded basalt stones, and 35 percent subrounded basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.

3Bt6—52 to 64 inches (132 to 163 cm); brown (10YR 5/3) extremely cobbly sandy clay, brown (7.5YR 4/3) moist; 42 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, very sticky, moderately plastic; few fine roots; common fine irregular pores; 60 percent discontinuous prominent clay films on surfaces along pores; 5 percent fine irregular black (N 2/0 dry) manganese masses and 5 percent fine irregular brown (7.5YR 4/4 dry) oxidized iron masses; 20 percent subrounded basalt stones, 25 percent subrounded basalt gravel, and 35 percent subrounded basalt cobbles; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 3.4 miles northwest of Oroville; adjacent to Little Cottonwood Creek, in Schrimer Ravine, approximately 300 feet west and 2,950 feet north of the southeast corner of sec. 25, T. 20 N., R. 3 E.; 39 degrees, 33 minutes, 39 seconds north latitude and 121 degrees, 34 minutes, 39 seconds west longitude; NAD27; USGS Quad: Oroville, California.

Range in Characteristics

Depth to an extremely weakly cemented duripan is 60 to 80 inches (152 to 203 cm) or more. The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 22 to 30 percent clay and 35 to 50 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur at a depth of 60 to 80 inches (152 to 203 cm) or more from December through April. Rock fragments on the surface range from 0 to 10 percent gravel and 5 to 50 percent cobbles.

The A horizon has dry color of 10YR 4/3 or 5/3. Moist color is 10YR 3/2 or 3/3. Texture is loam, gravelly fine sandy loam, gravelly loam, very gravelly loam, or very gravelly fine sandy loam. The content of clay ranges from 15 to 18 percent. The horizon has 10 to 40 percent gravel and 0 to 10 percent cobbles. The content of organic matter is 2 to 4 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 10YR 5/3, 5/4, or 6/3. Moist color is 10YR 3/2, 3/3, or 4/3 or 7.5YR 4/2. Texture is very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam, or extremely gravelly sandy clay loam. The content of clay ranges from 22 to 30 percent. The horizon has 25 to 65 percent gravel and 5 to 20 percent cobbles. The content of organic matter is 0.5 to 2 percent. Reaction is moderately acid or slightly acid.

The 2Bt horizon has dry color of 10YR 4/3, 5/3, 5/4, or 6/3 or 7.5YR 6/3. Moist color is 10YR 3/4 or 4/4 or 7.5YR 4/2, 4/3, or 5/4. Texture is extremely gravelly sandy clay, very cobbly sandy clay loam, extremely gravelly sandy clay loam, extremely cobbly sandy clay loam, or extremely cobbly sandy clay. The content of clay ranges from 25 to 40 percent. The horizon has 35 to 55 percent gravel, 10 to 40 percent cobbles, and 0 to 25 percent stones. The content of organic matter is 0.5 to 1 percent. Redoximorphic features range from 0 to 2 percent oxidized iron masses and 2 to 10 percent manganese masses. Reaction is slightly acid.

The 3Bt horizon has dry color of 10YR 4/3 or 5/3 or 7.5YR 6/4. Moist color is 10YR 3/3 or 7.5YR 4/3 or 5/4. Texture is extremely gravelly sandy clay, extremely gravelly clay, extremely cobbly sandy clay, or extremely cobbly clay. The content of clay ranges from 40 to 50 percent. The horizon has 25 to 50 percent gravel, 30 to 40 percent cobbles, and 0 to 20 percent stones. The content of organic matter is 0.2 to 0.8 percent. Redoximorphic features range from 0 to 5 percent oxidized iron masses and 5 to 10 percent oxidized manganese masses. Reaction is neutral.

Haploxeralfs

Haploxeralfs consist of moderately deep or deep, well drained soils that formed in colluvium derived from metavolcanic and metasedimentary rocks. These soils are on backslopes in canyons on Sierra Nevada foothills. Slopes range from 70 to 110 percent. The mean annual precipitation is about 62 inches (1,575 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs

Typical Pedon

Haploxeralfs, on a west-facing slope of 80 percent, under a cover of shrub interior live oak, Pacific poison oak, toyon, whiteleaf manzanita, and canyon live oak, at an elevation of 1,400 feet (427 m). When described on 6/30/1998, the soil was dry to a depth of 22 inches (56 cm) and slightly moist from 22 to 47 inches (56 to 119 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); slightly decomposed plant material; abrupt smooth boundary.

A—0.5 inch to 4 inches (1 to 10 cm); very pale brown (10YR 7/3) very gravelly loam, brown (7.5YR 4/3) moist; 26 percent clay; strong fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, slightly plastic; many very fine and fine roots; many very fine to medium irregular and tubular and few coarse tubular pores; 10 percent cobbles and 35 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; clear smooth boundary.

Bt1—4 to 9 inches (10 to 23 cm); very pale brown (10YR 7/4) very gravelly clay loam, brown (7.5YR 4/3) moist; 29 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, slightly plastic; common very fine to coarse roots; many very fine to coarse tubular and irregular pores; 80 percent continuous faint clay films; 20 percent cobbles and 40 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; clear smooth boundary.

Bt2—9 to 13 inches (23 to 33 cm); very pale brown (10YR 7/4) very gravelly clay loam, brown (7.5YR 4/3) moist; 32 percent clay; moderate fine subangular blocky structure; moderately hard, friable, moderately sticky, slightly plastic; common very fine to coarse roots; many very fine to coarse tubular and irregular pores; 80 percent continuous faint clay films; 10 percent cobbles and 45 percent gravel; moderately acid, pH 6.1 by Hellige-Truog; clear smooth boundary.

Bt3—13 to 22 inches (33 to 56 cm); very pale brown (10YR 7/4) extremely gravelly clay loam, brown (7.5YR 4/4) moist; 34 percent clay; moderate fine subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine to coarse roots; many very fine to coarse irregular and tubular pores; 80 percent continuous faint clay films; 5 percent stones, 35 percent cobbles, and 40 percent gravel; moderately acid, pH 6.1 by Hellige-Truog; clear smooth boundary.

Bt4—22 to 31 inches (56 to 79 cm); very pale brown (10YR 7/4) extremely gravelly clay loam, strong brown (7.5YR 4/6) moist; 35 percent clay; moderate fine

subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine to coarse roots; many very fine to coarse tubular and irregular pores; 80 percent continuous faint clay films; 10 percent stones, 25 percent cobbles, and 30 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; gradual smooth boundary.

Bt5—31 to 47 inches (79 to 119 cm); very pale brown (10YR 7/4) extremely gravelly clay loam, strong brown (7.5YR 4/6) moist; 36 percent clay; moderate fine subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to coarse tubular and irregular pores; 80 percent continuous faint clay films; 15 percent stones, 30 percent cobbles, and 40 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt irregular boundary.

R—47 inches (119 cm); indurated metavolcanic bedrock.

Type location: Butte County, California; about 1.1 miles south of Bear Lake, approximately 350 feet south and 2,200 feet east of the northwest corner of sec. 31, T. 24 N., R. 3 E.; 39 degrees, 54 minutes, 8 seconds north latitude and 121 degrees, 41 minutes, 13 seconds west longitude; NAD83; USGS Quad: Cohasset, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 60 inches (51 to 152 cm). The mean annual soil temperature is 59 to 69 degrees F (15 to 21 degrees C). The soil moisture control section is dry in all parts from about June to November (about 150 days). The particle-size control section averages 18 to 35 percent clay and 35 to 80 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 15 to 50 percent gravel, 5 to 25 percent cobbles, 0 to 20 percent stones, and 0 to 20 percent boulders.

The A horizon has dry color of 10YR 6/3 or 7/3, 7.5YR 6/3 or 7/3, or 5YR 5/4 or 6/4. Moist color is 7.5YR 4/2 or 4/3 or 5YR 3/3. Texture is loam, gravelly loam, very gravelly loam, or gravelly sandy loam. The content of clay ranges from 17 to 27 percent. The horizon has 10 to 50 percent gravel, 0 to 15 percent cobbles, 0 to 15 percent stones, and 0 to 15 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 6/4 or 7/4; 7.5YR 5/4, 6/4, 7/4, or 6/3; or 5YR 5/4, 5/6, or 6/6. Moist color is 7.5YR 4/3, 4/4, 4/6, or 5/4 or 5YR 3/4, 4/4, or 4/6. Texture is gravelly loam, very gravelly loam, very cobbly loam, gravelly clay loam, very gravelly clay loam, or extremely gravelly clay loam. The content of clay ranges from 20 to 40 percent. The horizon has 15 to 50 percent gravel, 0 to 35 percent cobbles, 0 to 20 percent stones, and 0 to 20 percent boulders. Reaction ranges from strongly acid to neutral.

Haploxeralfs, Terrace

Haploxeralfs, terrace, consist of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on stream terraces on the bottom of canyons on Cascade foothills. Slopes range from 0 to 8 percent. The mean annual precipitation is about 48 inches (1,219 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Haploxeralfs

Typical Pedon

Haploxeralfs, terrace, on a northeast-facing slope of 1 percent, under a cover of yellow starthistle and soft chess, at an elevation of 920 feet (280 m). When described on 10/5/1998, the soil was very slightly moist to a depth of 5 inches (13 cm) and dry below that depth. (Colors are for dry soil unless otherwise noted.)

A—0 to 5 inches (0 to 13 cm); yellowish brown (10YR 5/4) gravelly loam, brown (10YR 4/3) moist; 22 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; many very fine roots; common very fine and fine and few medium tubular and irregular pores; 5 percent cobbles and 25 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt1—5 to 11 inches (13 to 28 cm); yellowish brown (10YR 5/4) gravelly loam, brown (7.5YR 4/3) moist; 24 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine and fine and common medium tubular pores; 40 percent discontinuous distinct clay films; 5 percent cobbles, 5 percent stones, and 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; diffuse smooth boundary.

Bt2—11 to 18 inches (28 to 46 cm); brown (7.5YR 5/4) very gravelly loam, brown (7.5YR 4/3) moist; 27 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine and fine roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 5 percent stones, 10 percent cobbles, and 20 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; diffuse smooth boundary.

Bt3—18 to 32 inches (46 to 81 cm); brown (7.5YR 5/4) very cobbly clay loam, brown (7.5YR 4/4) moist; 34 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 90 percent continuous distinct clay films; 10 percent stones, 10 percent boulders, 20 percent cobbles, and 20 percent gravel; neutral, pH 6.7 by Hellige-Truog; diffuse smooth boundary.

Bt4—32 to 48 inches (81 to 122 cm); brown (7.5YR 5/4) extremely cobbly clay loam, brown (7.5YR 4/4) moist; 31 percent clay; moderate fine subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; 90 percent continuous distinct clay films; 15 percent boulders, 20 percent gravel, 20 percent stones, and 30 percent cobbles; neutral, pH 6.8 by Hellige-Truog; diffuse smooth boundary.

Bt5—48 to 63 inches (122 to 160 cm); brown (7.5YR 5/4) extremely cobbly sandy clay loam, brown (7.5YR 4/4) moist; 27 percent clay; moderate fine subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; many very fine and fine tubular pores; 90 percent continuous distinct clay films; 15 percent boulders, 20 percent stones, 20 percent gravel, and 30 percent cobbles; neutral, pH 6.9 by Hellige-Truog.

Type location: Butte County, California; about 1.7 miles southwest of Forest Ranch, approximately 1,400 feet north and 1,250 feet east of the southwest corner of sec. 12, T. 23 N., R. 2 E.; 39 degrees, 51 minutes, 44 seconds north latitude and 121 degrees, 42 minutes, 34 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 59 to 62 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 days). The particle-size control section averages 20 to 35 percent clay and 15 to 60 percent rock fragments, mostly cobbles. Mineralogy is mixed. Rock fragments on the surface range from 5 to 25 percent gravel, 0 to 15 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 10YR 5/2, 5/3, 5/4, or 6/4. Moist color is 10YR 3/2, 4/2, or 4/3 or 7.5YR 4/2. Texture is loam, gravelly loam, or fine sandy loam. The content of clay ranges from 15 to 26 percent. The horizon has 3 to 30 percent gravel,

0 to 5 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 5/3, 5/4, 6/3, or 6/4 or 7.5YR 5/4 or 6/4. Moist color is 10YR 4/3 or 4/4 or 7.5YR 3/4, 4/3, or 4/4. Texture is loam, gravelly loam, very gravelly loam, sandy clay loam, extremely gravelly sandy clay loam, extremely cobbly sandy clay, loam, clay loam, very cobbly clay loam, or extremely cobbly clay loam. The content of clay ranges from 18 to 35 percent. The horizon has 5 to 40 percent gravel, 0 to 30 percent cobbles, 0 to 25 percent stones, and 0 to 20 percent boulders. Reaction ranges from moderately acid to neutral.

Haploxerands

Haploxerands consist of moderately deep to very deep, well drained soils that formed in glacial outwash derived from granitic and volcanic rocks. These soils are on alluvial flats in Cascade and Sierra Nevada mountain valleys. Slopes range from 0 to 15 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Haploxerands

Typical Pedon

Haploxerands, on an east-northeast-facing slope of 15 percent, under a cover of white fir, sugar pine, and red fir, at an elevation of 4,280 feet (1,305 m). When described on 7/19/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); slightly decomposed plant material; abrupt smooth boundary.

A1—0.5 inch to 2 inches (1 to 5 cm); pale brown (10YR 6/3) medial sandy loam, brown (10YR 4/3) moist; 5 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine and fine tubular and irregular pores; 10 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.5; clear smooth boundary.

A2—2 to 5 inches (5 to 13 cm); pale brown (10YR 6/3) gravelly medial sandy loam, brown (10YR 4/3) moist; 3 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine and fine tubular and irregular pores; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 11.0; gradual smooth boundary.

Bw1—5 to 12 inches (13 to 30 cm); pale brown (10YR 6/3) medial sandy loam, brown (10YR 4/3) moist; 3 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine to coarse roots; many very fine and fine tubular and irregular pores; 10 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 11.0; gradual smooth boundary.

Bw2—12 to 23 inches (30 to 58 cm); pale brown (10YR 6/3) gravelly medial sandy loam, brown (10YR 4/3) moist; 2 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine to medium and common coarse roots; many very fine and fine tubular and irregular pores; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 11.0; gradual smooth boundary.

Bw3—23 to 30 inches (58 to 76 cm); very pale brown (10YR 7/3) gravelly coarse sandy loam, brown (10YR 4/3) moist; 2 percent clay; weak fine and medium subangular blocky structure parting to single grain; soft, very friable, nonsticky, nonplastic; many very fine and fine and common medium and coarse roots; many very fine and fine tubular and irregular pores; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 11.0; diffuse smooth boundary.

Bw4—30 to 42 inches (76 to 107 cm); very pale brown (10YR 7/3) gravelly coarse sandy loam, brown (10YR 4/3) moist; 2 percent clay; weak fine and medium subangular blocky structure parting to single grain; soft, very friable, nonsticky, nonplastic; common very fine to medium roots; many very fine and fine tubular and irregular pores; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.0; diffuse smooth boundary.

Bw5—42 to 60 inches (107 to 152 cm); very pale brown (10YR 7/3) gravelly coarse sandy loam, brown (10YR 4/3) moist; 2 percent clay; weak fine and medium subangular blocky structure parting to single grain; soft, very friable, nonsticky, nonplastic; common very fine to medium roots; many very fine and fine tubular and irregular pores; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.0; diffuse smooth boundary.

Bw6—60 to 80 inches (152 to 203 cm); very pale brown (10YR 7/3) coarse sandy loam, brown (10YR 4/3) moist; 2 percent clay; weak fine and medium subangular blocky structure parting to single grain; soft, very friable, nonsticky, nonplastic; common very fine to medium roots; many very fine and fine irregular and tubular pores; 10 percent gravel; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Plumas County, California; about 0.63 mile southwest of Campbell Cow Camp, approximately 200 feet south and 850 feet east of the northwest corner of sec. 23, T. 24 N, R. 5 E.; 39 degrees, 55 minutes, 44 seconds north latitude and 121 degrees, 23 minutes, 16 seconds west longitude; NAD27; USGS Quad: Kimshew Point, California.

Range in Characteristics

The depth to bedrock is 20 to more than 80 inches (51 to 203 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The soil moisture control section is dry in all parts from about July to October (about 120 days). The particle-size control section averages 2 to 20 percent clay and 5 to 35 percent rock fragments, mostly gravel. NaF pH is 9.8 to 11 to a depth of 40 inches (102 cm). Rock fragments on the surface range from 5 to 35 percent gravel, 0 to 15 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 10YR 5/2, 5/3, 6/2, or 6/3 or 7.5YR 6/4. Moist color is 10YR 3/2 or 4/3 or 7.5YR 4/3. Texture is medial sandy loam, gravelly medial sandy loam, medial coarse sandy loam, or gravelly medial coarse sandy loam. The content of clay ranges from 3 to 18 percent. The content of gravel is 5 to 25 percent. Reaction is moderately acid or slightly acid.

The Bw horizon has dry color of 10YR 5/3, 6/3, 7/3, or 8/6 or 7.5YR 6/4, 7/6, or 8/4. Moist color is 10YR 3/2, 4/2, 4/3, or 5/3 or 7.5YR 4/4, 5/6, or 5/8. Texture is sandy loam, gravelly sandy loam, coarse sandy loam, gravelly coarse sandy loam, or gravelly loamy coarse sand. The content of clay ranges from 1 to 20 percent. The content of gravel is 2 to 35 percent. Reaction ranges from very strongly acid to slightly acid.

Haploxerands, Granitic Till

Haploxerands, granitic till, consist of moderately deep to very deep, moderately well drained or well drained soils that formed in glacial till derived from quartz diorite, andesite, and basalt. These soils are on moraines in the Sierra Nevada Mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 82 inches (2,083 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Frigid Typic Haploxerands

Typical Pedon

Haploxerands, granitic till, on a southeast-facing slope of 14 percent, under a cover of white fir, sugar pine, incense cedar, California black oak, ponderosa pine, red fir, and shrubs, at an elevation of 4,945 feet (1,507 m). When described on 7/13/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); slightly decomposed plant material; abrupt smooth boundary.

A1—2 to 5 inches (5 to 13 cm); brown (10YR 5/3) medial sandy loam, very dark grayish brown (10YR 3/2) moist; 5 percent clay; weak fine and medium subangular blocky structure; loose, nonsticky, nonplastic; many very fine and fine and common medium roots; many very fine and fine and common medium irregular and tubular pores; 5 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 11.5; gradual smooth boundary.

A2—5 to 12 inches (13 to 30 cm); brown (10YR 5/3) medial sandy loam, dark grayish brown (10YR 4/2) moist; 4 percent clay; weak fine and medium subangular blocky structure; loose, nonsticky, nonplastic; many very fine to medium and common coarse roots; many very fine and fine and common medium tubular and irregular pores; 10 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 11.0; gradual smooth boundary.

AB—12 to 22 inches (30 to 56 cm); light brownish gray (10YR 6/2) stony medial sandy loam, dark grayish brown (10YR 4/2) moist; 3 percent clay; weak fine and medium subangular blocky structure parting to single grain; loose, nonsticky, nonplastic; many very fine to medium and common coarse roots; many very fine and fine and common medium tubular and irregular pores; 5 percent stones, 5 percent cobbles, and 5 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.

2Bw1—22 to 41 inches (56 to 104 cm); very pale brown (10YR 7/3) stony coarse sandy loam, brown (10YR 4/3) moist; 3 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium and few coarse roots; many very fine and fine and common medium tubular and irregular pores; 10 percent stones, 10 percent cobbles, and 10 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.4; gradual wavy boundary.

2Bw2—41 to 55 inches (104 to 140 cm); very pale brown (10YR 7/4) extremely bouldery coarse sandy loam, yellowish brown (10YR 5/4) moist; 2 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium and few coarse roots; many very fine to medium and few coarse tubular pores; 10 percent gravel, 15 percent stones, 20 percent very weakly cemented quartz diorite boulders, and 20 percent cobbles; strongly acid, pH 5.5 by Hellige-Truog; gradual smooth boundary.

2Bw3—55 to 74 inches (140 to 188 cm); very pale brown (10YR 7/4) extremely cobbly loamy coarse sand, yellowish brown (10YR 5/4) moist; 2 percent clay; weak fine subangular blocky structure parting to single grain; loose, nonsticky, nonplastic; common very fine and fine and few medium roots; many very fine and fine and common medium tubular pores; 10 percent very weakly cemented quartz diorite boulders, 15 percent stones, 20 percent cobbles, and 20 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.

2Bw4—74 to 87 inches (188 to 221 cm); very pale brown (10YR 8/4) extremely bouldery loamy coarse sand, brownish yellow (10YR 6/6) moist; 1 percent clay; single grain; loose, nonsticky, nonplastic; few very fine to medium roots; many very fine to medium irregular and tubular pores; 40 percent coarse irregular red (2.5YR 5/6 dry) oxidized iron masses; 10 percent stones, 10 percent cobbles, 15 percent gravel, and 30 percent very weakly cemented quartz diorite boulders; moderately acid, pH 6.0 by Hellige-Truog.

Type location: Butte County, California; about 1.5 miles north of Ramsey Bar, approximately 1,830 feet south and 1,720 feet west of the northeast corner of sec. 17, T. 17 N., R. 5 E.; 39 degrees, 56 minutes, 21 seconds north latitude and 121 degrees, 26 minutes, 8 seconds west longitude; NAD83; USGS Quad: Kimshew Point, California.

Range in Characteristics

The depth to dense glacial till is 20 to more than 80 inches (51 to 203 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The soil moisture control section is dry in all parts from about July to October (about 120 days). The particle-size control section averages 2 to 6 percent clay and 20 to 80 percent rock fragments. Redoximorphic features, such as iron masses with color of 2.5YR 4/6, 5YR 4/6 or 6/8, or 7.5YR 4/6 or 7/6, occur in the 2Bw horizon. NaF pH is 9.5 to 11.5 to a depth of 20 to 40 inches (51 to 102 cm). Rock fragments on the surface range from 15 to 40 percent gravel, 5 to 40 percent cobbles, 5 to 60 percent stones, and 5 to 60 percent boulders.

The A horizon has dry color of 10YR 4/2, 4/3, 5/2, 5/3, or 6/3. Moist color is 10YR 3/1, 3/2, or 4/2. Texture is medial sandy loam, gravelly medial sandy loam, very gravelly medial sandy loam, cobbly medial sandy loam, very stony medial sandy loam, very bouldery medial sandy loam, or extremely bouldery medial sandy loam. The content of clay ranges from 4 to 8 percent. The horizon has 5 to 35 percent gravel, 0 to 25 percent cobbles, 0 to 40 percent stones, and 0 to 40 percent boulders. Reaction is moderately acid or slightly acid.

The AB horizon has dry color of 10YR 5/4, 6/2, 6/3, or 6/4. Moist color is 10YR 3/3 or 4/2. Texture is extremely cobbly medial sandy loam, stony medial sandy loam, very stony medial sandy loam, extremely stony medial sandy loam, very bouldery medial sandy loam, or extremely bouldery medial coarse sandy loam. The content of clay ranges from 3 to 6 percent. The horizon has 5 to 15 percent gravel, 5 to 30 percent cobbles, 5 to 40 percent stones, and 0 to 40 percent boulders. Reaction is moderately acid or slightly acid.

The 2Bw horizon has dry color of 10YR 6/3, 6/4, 6/6, 7/3, 7/4, 8/4, or 8/6. Moist color is 10YR 4/2, 4/3, 4/4, 5/4, or 6/6. Texture is gravelly sandy loam, very gravelly sandy loam, cobbly sandy loam, very cobbly sandy loam, extremely cobbly sandy loam, very stony sandy loam, very bouldery sandy loam, stony coarse sandy loam, extremely bouldery coarse sandy loam, extremely cobbly loamy coarse sand, extremely stony loamy coarse sand, or extremely bouldery loamy coarse sand. The content of clay ranges from 1 to 5 percent. The horizon has 5 to 60 percent gravel, 0 to 25 percent cobbles, 0 to 40 percent stones, and 0 to 50 percent boulders. Reaction ranges from very strongly acid to slightly acid.

Haploxerands, Volcanic Till

Haploxerands, volcanic till, consist of moderately deep to very deep, moderately well drained or well drained soils that formed in glacial till derived from andesite, basalt, and quartz diorite. These soils are on moraines in the Cascade and Sierra Nevada Mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 82 inches (2,083 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Frigid Haploxerands

Typical Pedon

Haploxerands, volcanic till, on a northeast-facing slope of 10 percent, under a cover of white fir, incense cedar, ponderosa pine, sugar pine, California black oak, and

shrubs, at an elevation of 5,030 feet (1,533 m). When described on 7/13/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 4 cm); slightly decomposed plant material; abrupt smooth boundary.

A—2 to 4 inches (4 to 10 cm); brown (10YR 4/3) cobbly medial sandy loam, dark brown (7.5YR 3/3) moist; 7 percent clay; weak fine subangular blocky structure parting to single grain; loose, nonsticky, nonplastic; many very fine and fine and few medium roots; many very fine to medium and common coarse irregular and tubular pores; 5 percent gravel and 10 percent cobbles; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 10.5; clear smooth boundary.

Bw—4 to 17 inches (10 to 43 cm); brown (7.5YR 5/4) gravelly medial sandy loam, dark brown (7.5YR 3/4) moist; 10 percent clay; weak fine and medium granular structure; loose, nonsticky, nonplastic; many very fine to coarse roots; many very fine to coarse tubular pores; 5 percent stones, 10 percent cobbles, and 10 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 11.0; clear wavy boundary.

Bt1—17 to 37 inches (43 to 94 cm); light brown (7.5YR 6/4) gravelly sandy loam, strong brown (7.5YR 4/6) moist; 15 percent clay; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, nonplastic; many very fine to medium and few coarse roots; many very fine and fine and common medium tubular pores; 20 percent discontinuous faint clay films on surfaces along pores; 5 percent cobbles, 5 percent stones, and 15 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 10.5; clear smooth boundary.

Bt2—37 to 41 inches (94 to 104 cm); very pale brown (10YR 7/4) gravelly sandy loam, yellowish brown (10YR 5/4) moist; 19 percent clay; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine to medium and few coarse roots; many very fine and fine and common medium tubular pores; 30 percent discontinuous faint clay films on surfaces along pores; 5 percent stones, 5 percent cobbles, and 20 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.5; clear smooth boundary.

2Cd1—41 to 52 inches (104 to 132 cm); light gray (10YR 7/1) gravelly sandy loam, grayish brown (10YR 5/2) moist; 7 percent clay; massive parting to moderate medium and thick platy structure; very hard, very firm, noncemented, nonsticky, nonplastic; few very fine to medium roots in cracks; few very fine tubular pores; 5 percent oxidized iron masses; 5 percent cobbles, 5 percent stones, and 10 percent gravel; very strongly acid, pH 4.8 by Hellige-Truog; abrupt smooth boundary.

2Cd2—52 to 80 inches (132 to 203 cm); very pale brown (10YR 7/3) gravelly sandy loam, grayish brown (10YR 5/2) moist; 3 percent clay; massive parting to moderate medium and thick platy structure; extremely hard, very firm, noncemented, nonsticky, nonplastic; few very fine to medium roots in cracks; few very fine tubular pores; 5 percent oxidized iron masses and 5 percent manganese coatings; 5 percent cobbles, 5 percent stones, and 15 percent gravel; very strongly acid, pH 4.8 by Hellige-Truog.

Type location: Butte County, California; about 2 miles north of Ramsey Bar, approximately 750 feet north and 2,110 feet east of the southwest corner of sec. 9, T. 24 N., R. 5 E.; 39 degrees, 56 minutes, 47 seconds north latitude and 121 degrees, 25 minutes, 19 seconds west longitude; NAD83; USGS Quad: Kimshew Point, California.

Range in Characteristics

The depth to dense glacial till is 20 to more than 80 inches (51 to 203 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The soil

moisture control section is dry in all parts from about July to October (about 120 days). The particle-size control section averages 8 to 18 percent clay and 20 to 80 percent rock fragments. Redoximorphic features, such as iron masses with color of 2.5YR 4/6, 5YR 4/6 or 6/8, or 7.5YR 4/6 or 7/6, occur in the 2Cd horizon. NaF pH is 9.5 to 11.5 to a depth of 20 to 40 inches (51 to 102 cm). Rock fragments on the surface range from 15 to 40 percent gravel, 5 to 40 percent cobbles, 5 to 60 percent stones, and 5 to 60 percent boulders.

The A horizon has dry color of 10YR 4/2 or 4/3 or 7.5YR 6/2. Moist color is 7.5YR 3/2 or 3/3 or 10YR 3/1. Texture is cobbly medial sandy loam, very gravelly medial sandy loam, or very stony medial sandy loam. The content of clay ranges from 6 to 12 percent. The horizon has 5 to 30 percent gravel, 10 to 20 percent cobbles, 0 to 20 percent stones, and 0 to 10 percent boulders. Reaction ranges from moderately acid to neutral.

The Bw horizon has dry color of 7.5YR 5/4, 6/4, or 7/4. Moist color is 7.5YR 3/4, 4/3, 4/4, or 5/4. Texture is cobbly medial sandy loam, very gravelly medial sandy loam, extremely cobbly medial sandy loam, or very stony medial sandy loam. The content of clay ranges from 8 to 14 percent. The horizon has 5 to 35 percent gravel, 10 to 30 percent cobbles, 5 to 25 percent stones, and 0 to 20 percent boulders. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 10YR 6/6, 7/4, 8/6, or 8/4 or 7.5YR 6/4. Moist color is 10YR 4/4, 5/4, or 6/6 or 7.5YR 4/4 or 4/6. Texture is gravelly sandy loam, very bouldery sandy loam, extremely bouldery sandy loam, or extremely bouldery sandy clay loam. The content of clay ranges from 10 to 22 percent. The horizon has 5 to 20 percent gravel, 5 to 25 percent cobbles, 5 to 20 percent stones, and 0 to 50 percent boulders. Reaction ranges from strongly acid to slightly acid.

The 2Cd horizon has dry color of 10YR 7/1, 7/2, or 7/3; 2.5YR 8/3; or 5Y 7/3. Moist color is 10YR 5/2, 2.5Y 6/3, or 5Y 5/3. Texture is gravelly sandy loam or extremely bouldery loamy coarse sand. The content of clay ranges from 2 to 8 percent. The horizon has 10 to 20 percent gravel, 5 to 20 percent cobbles, 5 to 40 percent stones, and 0 to 40 percent boulders. Reaction ranges from very strongly acid to neutral.

Haploxererts

Haploxererts consist of deep or very deep, somewhat poorly drained soils that formed in mixed alluvium deposited over weathered metavolcanic rocks. These soils are in swales, in small basins, and on alluvium-influenced footslopes along terrace and Sierra Nevada foothill margins. Slopes range from 0 to 5 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Haploxererts

Typical Pedon

Haploxererts, gravelly silty clay, on an east-facing slope of 5 percent, under a cover of soft chess, hedgehog dogtail, medusahead, tarweed, brodiaea, and other annual grasses and forbs, at an elevation of 210 feet (64 m). When described on 10/15/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); dark brown (7.5YR 3/3) gravelly silty clay, dark brown (7.5YR 3/3) moist; 43 percent clay; strong fine and medium subangular blocky structure; very hard, very firm, very sticky, very plastic; many very fine roots; many very fine tubular pores; 1 percent fine spherical manganese masses; 15 percent subrounded mixed gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bw—2 to 10 inches (5 to 25 cm); dark brown (7.5YR 3/4) gravelly clay, dark brown (7.5YR 3/3) moist; 60 percent clay; strong coarse prismatic structure parting to strong medium and coarse angular blocky; extremely hard, extremely firm, very sticky, very plastic; many very fine roots; many very fine tubular pores; 1 percent fine spherical manganese masses; 15 percent subrounded mixed gravel; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.

Bss—10 to 30 inches (25 to 76 cm); dark brown (7.5YR 3/4) gravelly clay, dark brown (7.5YR 3/3) moist; 65 percent clay; strong coarse prismatic structure parting to strong medium and coarse angular blocky; extremely hard, extremely firm, very sticky, very plastic; few coarse and many very fine roots; many very fine tubular pores; 15 percent continuous prominent slickensides; 1 percent fine spherical manganese masses; 20 percent subrounded mixed gravel; slightly acid, pH 6.2 by Hellige-Truog; clear smooth boundary.

2BCt1—30 to 33 inches (76 to 84 cm); light yellowish brown (10YR 6/4) and yellowish brown (10YR 5/4) silty clay, yellowish brown (10YR 5/4) moist; 55 percent clay; strong fine and medium subangular blocky structure; very hard, very firm, very sticky, very plastic; common very fine roots; few fine and many very fine tubular pores; 1 percent fine spherical manganese masses; 5 percent subrounded mixed gravel; slightly acid, pH 6.6 by Hellige-Truog; clear smooth boundary.

2BCt2—33 to 41 inches (84 to 104 cm); yellowish brown (10YR 5/4) silty clay, yellowish brown (10YR 5/4) moist; 45 percent clay; strong medium and coarse subangular blocky structure; very hard, very firm, very sticky, very plastic; few very fine roots; few fine and many very fine tubular pores; 1 percent fine spherical manganese masses; 5 percent subrounded mixed gravel; neutral, pH 7.0 by Hellige-Truog; clear wavy boundary.

2Cr—41 to 44 inches (104 to 112 cm); weakly cemented greenschist.

Type location: Butte County, California; about 5.4 miles northeast of Honcut, approximately 500 feet north and 2,200 feet east of the southwest corner of sec. 35, T. 18 N., R. 4 E.; 39 degrees, 22 minutes, 4 seconds north latitude and 121 degrees, 29 minutes, 22 seconds west longitude; NAD83; USGS Quad: Loma Rica, California.

Range in Characteristics

The depth to paralithic bedrock is more than 40 inches (102 cm). The mean annual soil temperature is 61 to 65 degrees F (16 to 18 degrees C). The particle-size control section averages 55 to 65 percent clay and 3 to 20 percent rock fragments, mostly gravel. Mineralogy is smectitic. Reversible, surface-initiated cracks 3/8 to 1 inch (1 to 3 cm) wide extend to a depth of 30 inches (76 cm) from May to October (about 165 days) when the soils are not irrigated. Few or common slickensides are in the Bss horizon, from 10 to 30 inches (25 to 76 cm). A fluctuating water table can occur from the top of the bedrock to the surface of the soil from November through April. Redoximorphic features, such as oxidized iron masses and manganese masses, can occur in all horizons. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 7.5YR 3/3 or 10YR 3/4. Moist color is 7.5YR 3/3. Texture is silty clay loam, gravelly silty clay loam, silty clay, or gravelly silty clay. The content of clay ranges from 30 to 45 percent. The horizon has 0 to 15 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 1 to 3 percent. By sum of cations, base saturation ranges from 65 to 75 percent. Reaction ranges from strongly acid to slightly acid.

The Bw horizon has dry color of 7.5YR 3/3 or 3/4 or 5/4. Moist color is 7.5YR 3/2, 3/3, or 4/4. Texture is clay or gravelly clay. The content of clay ranges from 45 to 60 percent. The content of gravel is 5 to 15 percent. The content of organic matter is 0.5 to 1.5 percent. By sum of cations, base saturation ranges from 70 to 90 percent. Reaction is slightly acid or neutral.

The Bss horizon has dry color of 7.5YR 3/4. Moist color is 7.5YR 3/3. Texture is clay or gravelly clay. The content of clay ranges from 50 to 65 percent. The content of gravel is 3 to 20 percent. By sum of cations, base saturation ranges from 75 to 95 percent. Reaction is slightly acid or neutral.

The 2BCt horizon has dry color of 10YR 5/4, 5/6, or 6/4 or 7.5YR 5/6. Moist color is 10YR 4/6 or 5/4 or 7.5YR 4/6. Texture is silty clay or clay. The content of clay ranges from 40 to 55 percent. The content of gravel is 0 to 10 percent. By sum of cations, base saturation ranges from 80 to 95 percent. Reaction ranges from neutral to moderately alkaline.

The 2Cr horizon has dry color of 10YR 6/4. Moist color is 10YR 5/6. Texture is silty clay or clay. The content of clay ranges from 35 to 45 percent. Redoximorphic features occur as manganese masses and oxidized iron masses. Reaction ranges from neutral to moderately alkaline.

Haploxerolls

Haploxerolls consist of deep, moderately well drained soils that formed in alluvium derived from volcanic rocks. These soils are on alluvial fans. Slopes range from 0 to 2 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Haploxerolls

Typical Pedon

Haploxerolls loam, on a slope of 1 percent, under a cover of almond trees, at an elevation of 170 feet (52 m). When described on 9/9/1993, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

Ap1—0 to 5 inches (0 to 13 cm); brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; 24 percent clay; strong medium subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; common very fine and fine and few medium roots; many fine irregular and common very fine tubular pores; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

Ap2—5 to 16 inches (13 to 41 cm); brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; 25 percent clay; moderate medium subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; common very fine and fine and few medium roots; common very fine tubular pores; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bw1—16 to 27 inches (41 to 69 cm); brown (7.5YR 5/3) loam, dark brown (7.5YR 3/3) moist; 24 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; few coarse and common very fine to medium roots; common very fine tubular pores; neutral, pH 7.1 by Hellige-Truog; clear smooth boundary.

Bw2—27 to 40 inches (69 to 102 cm); brown (7.5YR 5/3) loam, dark brown (7.5YR 3/3) moist; 22 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; common very fine to coarse roots; common very fine tubular pores; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

Bw3—40 to 48 inches (102 to 122 cm); brown (7.5YR 5/4) loam, dark brown (7.5YR 3/3) moist; 23 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; few very fine and fine and common medium roots; common very fine tubular pores; neutral, pH 7.3 by Hellige-Truog; clear smooth boundary.

Bw4—48 to 52 inches (122 to 132 cm); brown (7.5YR 5/4) sandy loam, dark brown (7.5YR 3/4) moist; 13 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; few very fine and fine and common medium roots; many very fine irregular pores; 40 percent fine and medium durinodes; neutral, pH 7.3 by Hellige-Truog; abrupt smooth boundary.
2Bqm—52 inches (132 cm); indurated duripan.

Type location: Butte County, California; about 2.4 miles northwest of Cana; T. 23 N., R. 1 W.; in an unsectionized area in the Bosquejo Land Grant; 39 degrees, 51 minutes, 59 seconds north latitude and 122 degrees, 1 minute, 35 seconds west longitude; NAD27; USGS Quad: Foster Island, California.

Range in Characteristics

Depth to the duripan is 40 to 60 inches (102 to 152 cm) or more. The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 23 to 31 percent clay. Mineralogy is mixed. A fluctuating water table can occur from the top of the duripan to 20 inches (51 cm) below the surface of the soil from December through April.

The Ap horizon has dry color of 10YR 4/3 or 5/3. Moist color is 10YR 3/2 or 3/3. Texture is loam, clay loam, silt loam, or silty clay loam. The content of clay ranges from 18 to 35 percent. The content of gravel is 0 to 2 percent. The content of organic matter is 2.5 to 5 percent. Reaction ranges from moderately acid to neutral.

The Bw horizon has dry color of 10YR 5/3, 5/4, or 6/4 or 7.5YR 4/4, 4/6, 5/3, or 5/4. Moist color is 10YR 3/3, 3/4, or 4/3 or 7.5YR 3/3, 3/4, or 4/3. Texture is clay loam, loam, silty clay loam, silt loam, sandy clay loam, or sandy loam. The content of clay ranges from 9 to 35 percent. The content of gravel is 0 to 10 percent. The content of organic matter is 0.1 to 2.5 percent. This horizon is noneffervescent to strongly effervescent. Reaction ranges from neutral to moderately alkaline.

The C horizon, where it occurs, has dry color of 7.5YR 5/4 or 10YR 5/4. Moist color is 7.5YR 3/4 or 10YR 3/4. Texture is sandy loam, loam, or silt loam. The content of clay ranges from 10 to 27 percent. The content of organic matter is 0.1 to 0.8 percent. This horizon is noneffervescent to strongly effervescent. Reaction is neutral or slightly alkaline.

The 2Bqm horizon is slightly effervescent to strongly effervescent. Redoximorphic features include manganese masses and oxidized iron masses on top of the duripan. The horizon is slightly cemented to indurated.

Hartsmill Series

The Hartsmill series consists of very deep, well drained soils that formed in colluvium and residuum derived from metavolcanic rocks, mainly greenschist. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada foothills. Slopes range from 2 to 90 percent. The mean annual precipitation is about 43 inches (109 cm), and the mean annual air temperature is about 58 degrees F (14 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Ultic Palexeralfs

Typical Pedon

Hartsmill gravelly loam, on a southwest-facing slope of 46 percent, under a cover of whiteleaf manzanita, toyon, interior live oak, California black oak, Pacific poison oak, and very scattered ponderosa pine, at an elevation of 1,840 feet (561 m). When described on 7/27/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.
A—1 to 3 inches (3 to 8 cm); reddish brown (5YR 4/4) gravelly loam, dark reddish brown (5YR 3/3) moist; 14 percent clay; strong fine granular structure; soft, very friable, nonsticky, slightly plastic; common very fine roots; many very fine irregular pores; 30 percent angular gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.
Bt1—3 to 6 inches (8 to 15 cm); yellowish red (5YR 4/6) very gravelly loam, dark reddish brown (5YR 3/4) moist; 17 percent clay; strong coarse subangular blocky structure; hard, friable, nonsticky, slightly plastic; common fine and few medium and very fine roots; few very fine tubular pores; 10 percent continuous distinct clay films on surfaces along pores; 40 percent angular gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.
Bt2—6 to 13 inches (15 to 33 cm); yellowish red (5YR 4/6) very gravelly loam, dark reddish brown (2.5YR 3/4) moist; 20 percent clay; moderate medium subangular blocky structure; slightly hard, friable, nonsticky, moderately plastic; common fine and few medium and coarse roots; many very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds; 45 percent angular gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.
Bt3—13 to 24 inches (33 to 61 cm); red (2.5YR 4/6) very gravelly loam, dark reddish brown (2.5YR 3/4) moist; 25 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common fine and few medium and coarse roots; common very fine tubular pores; 45 percent continuous distinct clay films; 45 percent angular gravel; slightly acid, pH 6.3 by Hellige-Truog; gradual wavy boundary.
BCt1—24 to 35 inches (61 to 89 cm); red (2.5YR 4/6) very cobbly clay loam, dark red (2.5YR 3/6) moist; 33 percent clay; moderate medium angular blocky structure; hard, firm, moderately sticky, very plastic; few medium and coarse roots; common very fine tubular pores; 60 percent continuous distinct clay films on faces of peds and 90 percent continuous prominent clay films on rock fragments; 10 percent angular gravel and 40 percent angular cobbles; slightly acid, pH 6.2 by Hellige-Truog; clear smooth boundary.
BCt2—35 to 62 inches (89 to 157 cm); red (2.5YR 4/6) extremely cobbly clay loam, dark red (2.5YR 3/6) moist; 38 percent clay; moderate medium angular blocky structure; hard, very firm, moderately sticky, very plastic; few fine roots; common very fine tubular pores; 70 percent continuous distinct clay films on all faces of peds and 90 percent continuous distinct clay films on rock fragments; 10 percent angular gravel and 55 percent angular cobbles; slightly acid, pH 6.2 by Hellige-Truog; gradual wavy boundary.
Crt—62 inches (157 cm); moderately cemented, weathered greenschist with 90 percent continuous prominent clay films.

Type location: Butte County, California; about 5.8 miles northeast of Oroville Dam, approximately 2,250 feet west and 2,150 feet north of the southeast corner of sec. 9, T. 20 N., R. 5 E.; 39 degrees, 36 minutes, 16.41 seconds north latitude and 121 degrees, 25 minutes, 05.33 seconds west longitude; NAD83; USGS Quad: Oroville Dam, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 59 to 63 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 200 days). The particle-size control section averages 20 to 27 percent clay and 35 to 50 percent rock

fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 3 percent to a depth of 13 inches (33 cm) and is less than 1 percent below that depth. Rock fragments on the surface range from 0 to 15 percent gravel, 0 to 10 percent cobbles, 0 to 15 percent stones, and 0 to 15 percent boulders. Some pedons have a BAt horizon.

The A horizon has dry color of 5YR 4/4, 4/6, or 5/6. Moist color is 5YR 3/3, 3/4, or 4/6. Texture is gravelly loam with a high content of silt. The content of clay ranges from 14 to 18 percent. The content of gravel is 10 to 30 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 5YR 4/6 or 5/6 or 2.5YR 3/6 or 4/6. Moist color is 5YR 3/4 or 2.5YR 3/4 or 3/6. Texture is very gravelly loam, gravelly loam, gravelly clay loam, very gravelly clay loam, or extremely gravelly clay with a high content of silt. The content of clay ranges from 17 to 30 percent. The horizon has 10 to 50 percent gravel and 0 to 15 percent cobbles. Reaction ranges from moderately acid to neutral.

The BCt horizon has dry color of 2.5YR 4/6. Moist color is 2.5YR 3/6. Texture is very cobbly or extremely cobbly clay loam. The content of clay ranges from 28 to 40 percent. The horizon has 0 to 10 percent gravel and 40 to 55 percent cobbles. Reaction is moderately acid or slightly acid.

Hietanen Series

The Hietanen series consists of deep, well drained soils that formed in residuum and colluvium derived from metasedimentary rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 65 inches (1,651 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Typic Haploxerults

Typical Pedon

Hietanen gravelly loam, on a southwest-facing slope of 20 percent, under a cover of ponderosa pine and white fir, at an elevation of 3,600 feet (1,097 m). When described on 7/13/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 3 inches (3 to 8 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 20 percent clay; moderate fine and medium granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium irregular and tubular pores; 25 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 9.8; clear smooth boundary.

Bt1—3 to 8 inches (8 to 20 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/4) moist; 24 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine and fine tubular pores; 50 percent faint clay films; 5 percent cobbles and 15 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.

Bt2—8 to 19 inches (20 to 48 cm); reddish yellow (7.5YR 6/6) silt loam, reddish brown (5YR 4/4) moist; 27 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; common very fine and fine and few medium tubular pores; 50 percent faint clay films; 10 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.5; gradual smooth boundary.

Bt3—19 to 30 inches (48 to 76 cm); yellow (10YR 8/6) silt loam, brownish yellow (10YR 6/6) moist; 24 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to coarse roots; common very fine and fine tubular pores; 50 percent distinct clay films; 12 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.2; gradual smooth boundary.

Bt4—30 to 53 inches (76 to 135 cm); yellow (10YR 7/6) silt loam, yellowish brown (10YR 5/6) moist; 22 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine to medium roots; common very fine and fine tubular pores; 50 percent distinct clay films; 10 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.5; clear smooth boundary.

Cr—53 inches (135 cm); very weakly cemented phyllite bedrock; few very fine to medium roots; few very fine irregular and tubular pores; strongly acid, pH 5.5 by Hellige-Truog.

Type location: Butte County, California; about 3.2 miles northeast of Sawmill Peak, approximately 1,500 feet north and 360 feet west of the southeast corner of sec. 22, T. 23 N., R. 4 E.; 39 degrees, 49 minutes, 60 seconds north latitude and 121 degrees, 30 minutes, 20 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 50 to 57 degrees F (10 to 14 degrees C). The particle-size control section averages 24 to 35 percent clay and 2 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 5 to 30 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. Some pedons have a very gravelly Bt/Cr horizon.

The A horizon has dry color of 10YR 5/2, 5/3, or 6/4; 7.5YR 5/4, 6/3, 6/4, 7/3, or 7/4; or 5YR 6/4. Moist color is 10YR 3/2, 4/2, or 4/3; 7.5YR 3/4, 4/2, 4/3, or 4/4; or 5YR 4/3 or 4/4. Texture is loam, gravelly loam, very gravelly loam, or silt loam. The content of clay ranges from 18 to 27 percent. The content of gravel is 5 to 40 percent. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 7.5YR 5/4, 5/6, 6/4, or 6/6; 5YR 6/4 or 6/6; 10YR 5/4, 6/4, 7/2, 7/4, 7/6, or 8/6; or 2.5Y 5/3 or 7/4. Moist color is 7.5YR 4/3, 4/4, 4/6, or 5/6; 5YR 4/4, 4/6, or 5/6; 10YR 4/2, 4/3, 5/4, 5/6, or 6/6; or 2.5Y 4/2, 4/3, or 5/4. Hues of 10YR and 2.5Y normally occur in the lower part of the horizon. Texture is loam, gravelly loam, clay loam, gravelly clay loam, silt loam, gravelly silt loam, silty clay loam, or gravelly silty clay loam. The content of clay ranges from 22 to 35 percent. The horizon has 2 to 30 percent gravel and 0 to 10 percent cobbles. Reaction ranges from strongly acid to slightly acid.

Hoda Series

The Hoda series consists of very deep, well drained soils that formed in colluvium and residuum derived from granodiorite. These soils are in the Sierra Nevada Mountains. Slopes range from 3 to 50 percent. The mean annual precipitation is about 50 inches (1,270 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Fine, kaolinitic, mesic Ultic Haploxeralfs

Typical Pedon

Hoda loam. (Colors are for dry soil unless otherwise noted.)

Oi—1 inch to 0 (3 cm to 0); litter and duff.
A—0 to 7 inches (0 to 18 cm); brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; moderate very fine and fine granular structure; soft, very friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine and fine interstitial pores; slightly acid; clear smooth boundary.
Bt1—7 to 14 inches (18 to 36 cm); reddish yellow (5YR 6/6) clay loam, yellowish red (5YR 5/6) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium and few coarse roots; common very fine and fine interstitial pores; few thin clay films coating mineral grains; slightly acid; clear smooth boundary.
Bt2—14 to 21 inches (36 to 53 cm); yellowish red (5YR 5/8) clay, yellowish red (5YR 4/8) moist; moderate medium angular blocky structure; hard, friable, sticky, plastic; common medium and coarse roots; common very fine and fine tubular pores; common thin clay films on faces of peds and common moderately thick clay films in pores; slightly acid; gradual wavy boundary.
Bt3—21 to 48 inches (53 to 122 cm); reddish yellow (5YR 6/8) clay, yellowish red (5YR 5/8) moist; moderate medium angular blocky structure; hard, friable, sticky, plastic; common medium and coarse roots; common very fine and fine tubular and interstitial pores; common moderately thick clay films on faces of peds and in pores; moderately acid; clear irregular boundary.
BCt—48 to 72 inches (122 to 183 cm); reddish yellow (7.5YR 6/8) clay loam, strong brown (7.5YR 5/8) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; common medium and coarse roots; few very fine interstitial pores; few thin clay films in pores; moderately acid.

Type location: Yuba County, California; about 5.4 miles southeast of Challenge, approximately 100 feet south and 700 feet east of the northwest corner of sec. 6, T. 18 N., R. 8 E.; 39 degrees, 27 minutes, 18.78 seconds north latitude and 121 degrees, 7 minutes, 41.05 seconds west longitude; NAD27; USGS Quad: Challenge, California.

Range in Characteristics

The thickness of the solum ranges from 40 to 80 inches (102 to 203 cm), and the depth to paralithic bedrock is more than 80 inches (203 cm). The mean annual soil temperature is 50 to 54 degrees F (10 to 12 degrees C). The particle-size control section ranges from 35 to 50 percent clay. Mineralogy is kaolinitic. The content of organic matter is 2 to 6 percent to a depth of 72 inches (183 cm).

The A horizon has dry color of 10YR 5/2, 5/3, 4/3, or 3/3 or 7.5YR 5/4, 4/6, 4/2, or 4/4. Moist color is 10YR 3/3 or 3/4 or 7.5YR 3/4, 4/2, 4/4, 5/6, or 5/8. Moist chroma of 4 or more is below a depth of 5 inches (13 cm). Texture is loam. The content of clay ranges from 7 to 18 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 8/6, 7/8, 7/6, 6/8, or 6/6 or 5YR 7/8, 7/6, 6/8, 6/6, 5/8, 5/6, 4/8, or 4/6. Texture is clay loam or clay. The content of clay ranges from 35 to 50 percent. Reaction ranges from strongly acid to slightly acid.

Holillipah Series

The Holillipah series consists of very deep, somewhat excessively drained soils that formed in alluvium derived from mixed sources. These soils are on flood plains. Slopes are 0 to 1 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Sandy, mixed, thermic Typic Xerofluvents

Typical Pedon

Holillipah loamy sand. (Colors are for dry soil unless otherwise noted.)

Ap—0 to 6 inches (0 to 15 cm); light yellowish brown (10YR 6/4) loamy sand, brown (10YR 4/3) moist; weak medium granular structure; soft, very friable, nonsticky, nonplastic; few very fine roots; many very fine interstitial pores; neutral; abrupt wavy boundary.

C1—6 to 9 inches (15 to 23 cm); pale brown (10YR 6/3) sand, brown (10YR 5/3) moist; strata, 1 to 2 millimeters thick, and pockets, 1 to 2 centimeters across, of yellowish brown (10YR 5/6) silt loam; single grain; loose, nonsticky, nonplastic; many very fine interstitial pores; neutral; clear wavy boundary.

C2—9 to 20 inches (23 to 51 cm); light gray (10YR 7/1), stratified sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky, nonplastic; neutral; abrupt wavy boundary.

C3—20 to 26 inches (51 to 66 cm); very pale brown (10YR 7/4) fine sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky, nonplastic; common fine distinct brown (10YR 5/3) oxidized iron masses; neutral; abrupt wavy boundary.

C4—26 to 38 inches (66 to 96 cm); light gray (10YR 7/1), stratified sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky, nonplastic; continuous yellow (10YR 7/8) oxidized iron masses in a 0.5- to 1-millimeter stratum; neutral; abrupt smooth boundary.

C5—38 to 46 inches (96 to 117 cm); mixed very pale brown (10YR 7/3) and pale brown (10YR 6/3), stratified sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky, nonplastic; 2 percent rounded gravel; continuous yellowish brown (10YR 5/8) iron masses in a 1-millimeter stratum; many coarse prominent dark yellowish brown (10YR 4/4) and few medium prominent dusky red (2.5YR 3/2) oxidized iron masses; manganese stains; neutral; abrupt smooth boundary.

C6—46 to 48 inches (117 to 122 cm); light gray (10YR 7/2) loamy fine sand, dark brown (10YR 3/3) moist; single grain; soft, very friable, nonsticky, nonplastic; neutral; abrupt smooth boundary.

C7—48 to 57 inches (122 to 145 cm); light gray (10YR 7/1), stratified sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky, nonplastic; neutral; abrupt smooth boundary.

C8—57 to 66 inches (145 to 168 cm); light gray (10YR 7/2), stratified sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky, nonplastic; common fine prominent yellow (10YR 6/8) iron masses in fine strata; neutral; abrupt smooth boundary.

Type location: Yuba County, California; about 3.8 miles northeast of Marysville, approximately 850 feet (253 m) north of Hooper Road and 300 feet (91 m) east of Hallwood Boulevard; T. 16 N., R. 4 E.; in an unsectionized area in the Honcut Rancho Land Grant; 39 degrees, 12 minutes, 5 seconds north latitude and 121 degrees, 30 minutes, 33 seconds west longitude; NAD27; USGS Quad: Yuba City, California.

Range in Characteristics

The depth of the soils is more than 80 inches (203 cm). The mean annual soil temperature is 64 or 65 degrees F (18 degrees C). Mineralogy is mixed. Unless the soils are irrigated, the soil moisture control section is dry in all parts from about May through October and moist in some or all parts from about November through April. Texture is stratified sand, loamy sand, sandy loam, or fine sandy loam. The content of clay ranges from 0 to 10 percent. The content of organic carbon decreases irregularly with increasing depth. Reaction is slightly acid or neutral.

The A horizon has dry color of 10YR 6/4 or 6/3. Moist color is 10YR 4/4 or 4/3.

The C horizon has dry color of 10YR 8/1, 7/4, 7/3, 7/2, 7/1, or 6/3. Moist color is 10YR 7/2, 6/2, 5/4, 5/3, 5/2, 4/4, 4/3, or 3/3. The horizon has distinct or prominent redoximorphic features.

Holland Series

The Holland series consists of very deep, well drained soils that formed in colluvium and residuum derived from granodiorite. These soils are in the Sierra Nevada Mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 50 inches (1,270 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, semiactive, mesic Ultic Haploxeralfs

Typical Pedon

Holland loam. (Colors are for dry soil unless otherwise noted.)

Oi—2 inches to 0 (5 cm to 0); litter and duff.
A1—0 to 4 inches (0 to 10 cm); brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak very fine and fine granular structure; soft, friable, nonsticky, nonplastic; common very fine and fine and few medium roots; common very fine and fine irregular pores; slightly acid; gradual smooth boundary.
A2—4 to 15 inches (10 to 38 cm); reddish brown (5YR 5/4) loam, reddish brown (5YR 4/4) moist; weak fine subangular blocky structure; soft, friable, nonsticky, nonplastic; few medium and coarse and common fine roots; common very fine and fine irregular pores; slightly acid; gradual wavy boundary.
Bt1—15 to 35 inches (38 to 89 cm); reddish yellow (5YR 6/8) clay loam, yellowish red (5YR 4/8) moist; moderate fine subangular blocky structure; hard, firm, nonsticky, slightly plastic; few fine to coarse roots; common fine and very fine irregular pores; common thin clay films on faces of peds and in pores; moderately acid; clear wavy boundary.
Bt2—35 to 50 inches (89 to 127 cm); reddish yellow (7.5YR 6/8) clay loam, strong brown (7.5YR 5/8) moist; massive; slightly hard, friable, nonsticky, slightly plastic; few medium and coarse roots; common very fine and fine irregular and common fine tubular pores; common thin clay films bridging mineral grains; moderately acid; gradual irregular boundary.
BCt—50 to 65 inches (127 to 165 cm); reddish yellow (7.5YR 7/8) clay loam, reddish yellow (7.5YR 6/8) moist; massive; slightly hard, friable, nonsticky, slightly plastic; few medium roots; common very fine and fine irregular pores; common thin clay films bridging mineral grains; strongly acid.

Type location: Yuba County, California; about 4.2 miles southeast of Challenge, approximately 1,600 feet south and 300 feet east of the northwest corner of sec. 36, T. 19 N., R. 7 E.; 39 degrees, 27 minutes, 56.58 seconds north latitude and 121 degrees, 8 minutes, 48.2 seconds west longitude; NAD27; USGS Quad: Challenge, California.

Range in Characteristics

The depth of the soils is more than 60 inches (152 cm). The mean annual soil temperature is 52 to 54 degrees F (11 to 12 degrees C). The soil moisture control section is dry in all parts from about July 15 to October 15 (about 95 days). Mineralogy is mixed. The content of organic matter is 2 to 5 percent to a depth of 65 inches (165 cm).

The A horizon has dry color of 10YR 5/3, 5/2, 4/3, 4/2, or 3/3; 7.5YR 5/4, 5/2, 4/4, or 4/2; or 5YR 5/4. Texture is sandy loam or loam. The content of clay ranges from 12 to 25 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 6/8, 6/6, 6/4, 5/8, 5/6, 5/4, 4/6, or 4/4 or 5YR 6/8, 6/6, 5/8, 5/6, 5/4, 4/8, 4/6, or 4/4. Texture is sandy clay loam or clay loam. The content of clay ranges from 25 to 35 percent. Reaction ranges from strongly acid to slightly acid.

The BCt horizon has dry color of 7.5YR 7/8, 5/6, or 4/6. Moist color is 7.5YR 4/4, 4/6, 5/4, or 6/8. Texture is sandy clay loam or clay loam. The content of clay ranges from 25 to 35 percent.

Hotaw Series

The Hotaw series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from granodiorite. These soils are in the Sierra Nevada Mountains. Slopes range from 5 to 75 percent. The mean annual precipitation is about 50 inches (1,270 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Ultic Haploxeralfs

Typical Pedon

Hotaw loam. (Colors are for dry soil unless otherwise noted.)

Oi—1 inch to 0 (3 cm to 0); litter and duff.

A1—0 to 4 inches (0 to 10 cm); brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; moderate fine granular structure; soft, very friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine and fine irregular pores; slightly acid; gradual smooth boundary.

A2—4 to 12 inches (10 to 30 cm); light brown (7.5YR 6/4) loam, brown (7.5YR 5/4) moist; weak medium subangular blocky structure; soft, friable, slightly sticky, slightly plastic; common very fine to medium and few coarse roots; many very fine and fine irregular pores; slightly acid; gradual wavy boundary.

Bt—12 to 34 inches (30 to 86 cm); light yellowish brown (10YR 6/4) sandy clay loam, yellowish brown (10YR 5/6) moist; moderate medium subangular blocky structure; hard, firm, sticky, plastic; common fine and medium and many coarse roots; common very fine and fine tubular pores; common moderately thick clay films in pores; moderately acid; clear wavy boundary.

Cr—34 to 50 inches (86 to 127 cm); weathered granodiorite.

Type location: Yuba County, California; about 4.1 miles west of Camptonville, approximately 700 feet south and 2,200 feet west of the northeast corner of sec. 6, T. 18 N., R. 8 E.; 39 degrees, 27 minutes, 32.1 seconds north latitude and 121 degrees, 7 minutes, 26.04 seconds west longitude; NAD27; USGS Quad: Camptonville, California.

Range in Characteristics

The depth to paralithic bedrock ranges from 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 52 to 56 degrees F (11 to 13 degrees C). The particle-size control section ranges from 18 to 25 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 5 percent to a depth of 38 inches (97 cm).

The A horizon has dry color of 10YR 6/4, 6/3, 5/8, 5/6, 5/4, 5/3, 4/3, or 3/4 or 7.5YR 6/4, 5/4, 5/2, 4/4, or 4/2. Texture is loam or sandy loam. The content of clay ranges from 7 to 15 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 10YR 6/4, 5/6, 5/3, or 4/3 or 7.5YR 6/8, 6/4, 5/8, 5/6, 5/4, 5/2, 4/6, 4/4, or 4/2. Texture is sandy clay loam or clay loam. The content of clay ranges from 20 to 35 percent. Reaction ranges from strongly acid to slightly acid.

Hurleton Series

The Hurleton series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from metamorphic and intrusive igneous rocks, mainly quartz diorite and gabbro. These soils are on ridgetops and side slopes on plutons on Sierra foothills. Slopes range from 2 to 50 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs

Typical Pedon

Hurleton gravelly sandy loam, on a south-facing slope of 9 percent, under a cover of blue oak, foothill pine, interior live oak, whiteleaf manzanita, chaparral coffeeberry, Pacific poison oak, rattlesnake brome, ripgut brome, wild onion, and rose clover, at an elevation of 1,300 feet (396 m). When described on 8/4/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A1—0 to 3 inches (0 to 8 cm); brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; 10 percent clay; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; many very fine roots; common medium and many very fine tubular pores; 22 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.

A2—3 to 7 inches (8 to 18 cm); yellowish brown (10YR 5/4) gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; 12 percent clay; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; many very fine roots; many very fine and fine tubular pores; 20 percent subangular gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.

BA—7 to 12 inches (18 to 30 cm); brown (7.5YR 5/4) gravelly sandy loam, dark brown (7.5YR 3/4) moist; 14 percent clay; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; many very fine roots; many very fine tubular pores; 30 percent subangular gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

Bt1—12 to 16 inches (30 to 41 cm); strong brown (7.5YR 5/6) very gravelly sandy loam, strong brown (7.5YR 4/6) moist; 16 percent clay; moderate fine subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine and fine tubular pores; 10 percent patchy faint clay films on faces of peds; 55 percent subangular gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

Bt2—16 to 19 inches (41 to 48 cm); strong brown (7.5YR 5/6) very gravelly sandy loam, strong brown (7.5YR 4/6) moist; 19 percent clay; moderate fine and medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine tubular pores; 10 percent patchy faint clay films on faces of peds; 45 percent subangular gravel; slightly acid, pH 6.4 by Hellige-Truog; clear smooth boundary.

Bt3—19 to 25 inches (48 to 64 cm); reddish yellow (7.5YR 6/6) extremely gravelly sandy clay loam, strong brown (7.5YR 4/6) moist; 23 percent clay; strong fine and medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; few very fine and medium roots; few very fine tubular pores; 10 percent patchy faint clay films on all faces of peds; 70 percent subangular gravel; moderately acid, pH 5.7 by Hellige-Truog; abrupt smooth boundary.

R—25 inches (64 cm); reddish yellow (7.5YR 6/6), indurated quartz diorite bedrock, strong brown (7.5YR 5/6) moist.

Type location: Butte County, California; about 2.6 miles southwest of Hurleton, approximately 2,700 feet south and 2,000 feet east of the northwest corner of sec. 21, T. 19 N., R. 5 E.; 39 degrees, 29 minutes, 14.99 seconds north latitude and 121 degrees, 25 minutes, 17.37 seconds west longitude; NAD83; USGS Quad: Bangor, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 63 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 150 days). The particle-size control section averages 20 to 26 percent clay and 36 to 70 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed.

The A horizon has dry color of 10YR 5/3 or 5/4 or 7.5YR 5/4. Moist color is 10YR 2/2, 3/2, 3/3, or 3/4 or 7.5YR 3/4. Texture is sandy loam, gravelly sandy loam, or very gravelly loam. The content of clay ranges from 10 to 17 percent. The content of gravel is 10 to 45 percent. By sum of cations, base saturation ranges from 45 to 60 percent. The content of organic matter is 3 to 8 percent. Reaction is moderately acid or slightly acid.

The BA horizon has dry color of 7.5YR 5/3, 5/4, 5/6, 6/3, or 6/4. Moist color is 7.5YR 3/2, 3/4, 4/3, or 4/4. Texture is gravelly or very gravelly sandy loam. The content of clay ranges from 14 to 20 percent. The horizon has 25 to 45 percent gravel and 0 to 45 percent cobbles. By sum of cations, base saturation ranges from 50 to 65 percent. The content of organic matter is 1.2 to 3 percent. Reaction is moderately acid or slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 5/4, 6/4, 6/6, or 7/2. Moist color is 7.5YR 4/4, 5/4, or 6/2. Texture is very gravelly sandy loam, very gravelly loam, or very gravelly sandy clay loam. The content of clay ranges from 16 to 24 percent. The content of gravel is 35 to 60 percent, and the content of cobbles is 0 to 60 percent. By sum of cations, base saturation ranges from 60 to 74 percent. The content of organic matter is 0.4 to 1.3 percent. Reaction is moderately acid or slightly acid.

The middle part of the Bt horizon has dry color of 7.5YR 5/6, 6/4, 6/6, or 7/4. Moist color is 7.5YR 4/3, 4/6, or 5/6. Texture is very gravelly sandy loam, very gravelly loam, very cobbly loam, or very gravelly sandy clay loam. The content of clay ranges from 19 to 32 percent. The content of gravel is 25 to 45 percent, and the content of cobbles is 0 to 60 percent. By sum of cations, base saturation ranges from 75 to 85 percent. The content of organic matter is 0.2 to 0.6 percent. Reaction ranges from very strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 7.5YR 5/6, 5/8, or 6/6 or 10YR 5/4. Moist color is 7.5YR 4/4, 4/6, or 5/6 or 10YR 4/4. Texture is very gravelly sandy clay loam, extremely gravelly sandy clay loam, or extremely cobbly sandy clay loam. The content of clay ranges from 20 to 35 percent. The content of gravel is 35 to 70 percent, and the content of cobbles is 0 to 60 percent. By sum of cations, base saturation ranges from 75 to 85 percent. The content of organic matter is 0 to 0.4 percent. Reaction ranges from strongly acid to slightly acid.

Ignord Series

The Ignord series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on distal alluvial fans. Slopes range from 0 to 2 percent. The mean annual precipitation is about 21 inches (533 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Coarse-loamy, mixed, superactive, thermic Pachic Haploxerolls

Typical Pedon

Ignord fine sandy loam, on a slope of less than 1 percent, under a cover of valley oak, yellow starthistle, and annual grasses, at an elevation of 131 feet (40 m). When described on 8/24/1994, the soil was moist at a depth of 4 to 77 inches (10 to 196 cm). (Colors are for dry soil unless otherwise noted.)

Akp—0 to 4 inches (0 to 10 cm); dark grayish brown (10YR 4/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; 10 percent clay; single grain and weak fine and medium granular structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine interstitial pores; slightly effervescent; disseminated carbonates; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

Ak1—4 to 14 inches (10 to 36 cm); dark grayish brown (10YR 4/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; 8 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine and fine roots; common very fine interstitial and common very fine and fine and few medium tubular pores; violently effervescent; disseminated carbonates; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

Ak2—14 to 25 inches (36 to 64 cm); dark grayish brown (10YR 4/2) sandy loam, very dark grayish brown (10YR 3/2) moist; 10 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine and fine and few medium roots; common fine interstitial and many very fine and fine tubular pores; violently effervescent; disseminated carbonates; moderately alkaline, pH 8.2 by Hellige-Truog; abrupt smooth boundary.

Ak3—25 to 32 inches (64 to 81 cm); brown (10YR 5/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; 8 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots; common fine interstitial pores; violently effervescent; disseminated carbonates; moderately alkaline, pH 8.2 by Hellige-Truog; clear wavy boundary.

Bk—32 to 53 inches (81 to 135 cm); brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; 8 percent clay; massive; soft, very friable, nonsticky, nonplastic; few very fine roots; common very fine and fine tubular pores; violently effervescent; disseminated carbonates; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.

Bkq—53 to 58 inches (135 to 147 cm); brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; 10 percent clay; massive; soft, very friable, nonsticky, nonplastic; few very fine roots; common very fine and fine and few medium tubular pores; 20 percent weakly cemented with silica; violently effervescent; disseminated carbonates; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

Bk´—58 to 77 inches (147 to 196 cm); brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; 10 percent clay; massive; soft, very friable, nonsticky, nonplastic; few very fine and medium roots; many very fine and fine and few medium tubular pores; very slightly effervescent; disseminated carbonates; moderately alkaline, pH 8.0 by Hellige-Truog.

Type location: Butte County, California; about 2 miles west of Chico, approximately 1,400 feet west of the Mt. Diablo meridian and 2,750 feet south of the line separating T. 22 N. and T. 21 N.; in an unsectionized area in the Rancho de Farwell Land Grant; 39 degrees, 42 minutes, 10 seconds north latitude and 121 degrees, 55 minutes, 22 seconds west longitude; NAD27; USGS Quad: Ord Ferry, California.

Range in Characteristics

The thickness of the solum is more than 72 inches (183 cm). The mean annual soil temperature is 60 to 62 degrees F (16 to 17 degrees C). The soil moisture control

section is moist from about December 1 to March 31 (about 110 to 140 days) and is dry in all parts from about May 1 to September 31 (about 150 to 170 days). The particle-size control section averages 8 to 15 percent clay. Mineralogy is mixed. Disseminated lime is at the surface to at least 40 inches (102 cm) below the surface, and the soils are very slightly effervescent to violently effervescent. The content of calcium carbonate ranges from 1 to 4 percent throughout the profile. The content of organic matter is 1 to 4 percent at the surface and decreases regularly with increasing depth. A fluctuating water table can occur below a depth of 72 inches (183 cm) from December through March. Some pedons have a weakly cemented layer within the Bk horizon. This layer is 3 to 8 inches (8 to 20 cm) thick. Silica cementation makes up less than 20 percent of the layer.

The Akp horizon has dry color of 10YR 4/2, 5/2, or 5/3. Moist color is 10YR 2/2, 3/2, or 3/3. The content of clay ranges from 8 to 20 percent. Reaction is slightly alkaline or moderately alkaline.

The Ak horizon has dry color of 10YR 4/2, 5/2, or 5/3. Moist color is 10YR 2/2, 3/2, or 3/3. Texture is fine sandy loam or sandy loam. The content of clay ranges from 8 to 15 percent. Reaction is slightly alkaline or moderately alkaline.

The Bk and Bkq horizons have dry color of 10YR 5/3, 6/2, 6/3, or 6/4. Moist color is 10YR 3/3, 3/4, 4/2, 4/3, or 4/4. Texture is fine sandy loam or sandy loam. The content of clay ranges from 8 to 15 percent. Reaction is slightly alkaline or moderately alkaline.

Igo Series

The Igo series consists of very shallow, somewhat poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are in interfluves on terraces. Slopes range from 0 to 3 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 61 degrees F (16 degree C).

Taxonomic class: Loamy, mixed, superactive, thermic, shallow Typic Durixeralfs

Typical Pedon

Igo gravelly loam, on an east-southeast-facing slope of 1 percent, under a cover of soft chess, grasspink, red brome, filaree, navarretia, brodiaea, and patches of wild oat, at an elevation of 195 feet (59 m). When described on 5/6/1998, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 3 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 23 percent clay; moderate thin and medium platy structure; very hard, friable, slightly sticky, slightly plastic; few fine and many very fine roots; common very fine and fine tubular and few medium irregular pores; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt1—1 to 5 inches (3 to 13 cm); brown (7.5YR 5/4) gravelly clay loam, brown (7.5YR 4/3) moist; 30 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; few fine and common very fine roots; many very fine and fine tubular and common medium tubular and irregular pores; 40 percent discontinuous faint clay films; 20 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt2—5 to 9 inches (13 to 23 cm); brown (7.5YR 5/4) gravelly clay loam, brown (7.5YR 4/3) moist; 34 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; few very fine roots; common fine and many very fine tubular pores; 60 percent discontinuous faint clay films; 25 percent gravel; neutral, pH 7.2 by Hellige-Truog; abrupt smooth boundary.

2Bqm—9 inches (23 cm); very strongly cemented duripan; massive; very strongly cemented by silica; 10 percent fine prominent platy manganese coatings at the top of the horizon; 10 percent cobbles and 50 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 0.6 mile southwest of the intersection of Cana Pine Creek Road and Highway 99, approximately 300 feet south and 1,000 feet east of the northwest corner of sec. 4, T. 23 N., R. 1 W.; 39 degrees, 52 minutes, 58 seconds north latitude and 121 degrees, 59 minutes, 24 seconds west longitude; NAD27; USGS Quad: Richardson Springs NW, California.

Range in Characteristics

Depth to the duripan is 4 to 10 inches (10 to 25 cm). The mean annual soil temperature is 62 to 65 degrees F (18 to 22 degrees C). The soil moisture control section is dry in all parts from about May to October (about 180 days). The particle-size control section averages 22 to 35 percent clay and 2 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and a depth of 2 inches (5 to 25 cm) from December through March. Redoximorphic features, such as iron-manganese masses and iron-manganese concretions, can occur throughout the profile. Rock fragments on the surface range from 2 to 50 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 7.5YR 5/4 or 6/4. Moist color is 7.5YR 4/2 or 4/3. Texture is loam, gravelly loam, or gravelly clay loam. The content of clay ranges from 18 to 30 percent. The horizon has 0 to 30 percent gravel and 0 to 5 percent cobbles. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 4/4, 5/4, or 6/4. Moist color is 7.5YR 3/4 or 4/3 or 5YR 4/3. Texture is loam, gravelly loam, clay loam, or gravelly clay loam. The content of clay ranges from 22 to 36 percent. The horizon has 0 to 30 percent gravel and 0 to 5 percent cobbles. Reaction is neutral.

Islandbar Series

The Islandbar series consists of very deep, somewhat excessively drained soils that formed in residuum and colluvium derived from coarse grained intrusive igneous rocks, mainly trondhjemite and quartz diorite. These soils are on ridgetops and side slopes on granitic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 58 inches (1,473 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Coarse-loamy, mixed, active, mesic Typic Dystroxerepts

Typical Pedon

Islandbar sandy loam, on a northwest-facing slope of 5 percent, under a cover of conifers, hardwoods, and shrubs, at an elevation of 2,220 feet (677 m). When described on 7/22/1998, the soil was dry to a depth of 36 inches (91 cm) and was slightly moist from 36 to 72 inches (91 to 183 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); slightly decomposed plant material; abrupt smooth boundary.

A1—2 to 5 inches (5 to 13 cm); light brownish gray (10YR 6/2) sandy loam, dark grayish brown (10YR 4/2) moist; 12 percent clay; weak fine subangular blocky structure parting to weak fine granular; slightly hard, very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine and fine irregular pores;

5 percent mica flakes; 5 percent rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

A2—5 to 9 inches (13 to 23 cm); pale brown (10YR 6/3) sandy loam, dark grayish brown (10YR 4/2) moist; 10 percent clay; weak very fine subangular blocky structure parting to weak fine granular; slightly hard, very friable, nonsticky, nonplastic; common very fine and fine roots; common very fine tubular pores; 20 percent mica flakes; 5 percent subrounded gravel; moderately acid, pH 5.8 by Hellige-Truog; abrupt smooth boundary.

Bw1—9 to 27 inches (23 to 69 cm); light yellowish brown (10YR 6/4) sandy loam, brown (10YR 4/3) moist; 5 percent clay; weak very fine subangular blocky structure parting to weak fine granular; slightly hard, very friable, nonsticky, nonplastic; common fine and medium roots; common very fine tubular pores; 25 percent mica flakes; 5 percent subrounded gravel; moderately acid, pH 5.8 by Hellige-Truog; clear smooth boundary.

Bw2—27 to 36 inches (69 to 91 cm); very pale brown (10YR 7/4) sandy loam, yellowish brown (10YR 5/4) moist; 7 percent clay; weak very fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common fine and medium and few coarse roots; common very fine tubular pores; 30 percent mica flakes; 5 percent subrounded gravel; moderately acid, pH 5.8 by Hellige-Truog; clear smooth boundary.

Bw3—36 to 47 inches (91 to 119 cm); pink (7.5YR 7/4) sandy loam, brown (7.5YR 5/4) moist; 12 percent clay; weak very fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common fine and medium and few coarse roots; common very fine tubular pores; 35 percent mica flakes; 5 percent subrounded gravel; moderately acid, pH 5.8 by Hellige-Truog; clear smooth boundary.

Bw4—47 to 58 inches (119 to 147 cm); pink (7.5YR 7/4) sandy loam, light brown (7.5YR 6/4) moist; 10 percent clay; weak very fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common fine and medium roots; common very fine tubular pores; moderately acid, pH 5.8 by Hellige-Truog; gradual wavy boundary.

C1—58 to 62 inches (147 to 157 cm); very pale brown (10YR 8/4) loamy sand, yellowish brown (10YR 5/4) moist; 2 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; common fine roots; many very fine interstitial pores; moderately acid, pH 5.8 by Hellige-Truog; gradual wavy boundary.

C2—62 to 72 inches (157 to 183 cm); extremely gravelly loamy sand; 2 percent clay; massive; very hard, extremely firm, nonsticky, nonplastic; 90 percent subangular gravel; moderately acid, pH 6.0 by Hellige-Truog.

Type location: Butte County, California; about 2 miles west of Featherfalls, approximately 20 feet west and 1,300 feet south of the northeast corner of sec. 16, T. 20 N., R. 6 E.; 39 degrees, 35 minutes, 47 seconds north latitude and 121 degrees, 17 minutes, 50 seconds west longitude; NAD83; USGS Quad: Forbestown, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 53 to 59 degrees F (12 to 15 degrees C). The particle-size control section averages 5 to 18 percent clay and 0 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 2 percent to a depth of 9 inches (23 cm). Rock fragments on the surface range from 5 to 10 percent gravel. Some pedons do not have a C horizon.

The A horizon has dry color of 10YR 5/2, 5/3, 6/2, 6/3, 6/4, or 7/2. Moist color is 10YR 3/1, 3/2, 4/2, or 4/3. Texture is sandy loam, fine sandy loam, or gravelly sandy loam. The content of clay ranges from 10 to 18 percent. The content of gravel is 5 to 20 percent. Reaction ranges from moderately acid to neutral.

The Bw horizon has dry color of 10YR 6/3, 6/4, 7/2, 7/3, 7/4, 8/3, or 8/4; 7.5YR 7/4; or 2.5Y 7/8 or 8/3. Moist color is 10YR 4/2, 4/3, 4/4, 5/3, 5/4, 6/3, 6/4, 7/4, or 7/6; 7.5YR 5/4, 5/6, 6/4, or 6/6; or 2.5Y 7/8 or 8/3. Texture is sandy loam, fine sandy loam, coarse sandy loam, gravelly sandy loam, or gravelly fine sandy loam. The content of clay ranges from 5 to 18 percent. The content of gravel is 0 to 30 percent. Reaction ranges from strongly acid to neutral.

The C horizon has dry color of 10YR 6/3, 7/3, 7/4, 8/3, or 8/4 or 2.5Y 8/3. Moist color is 10YR 4/3, 4/4, 5/4, 7/4, or 7/6 or 2.5Y 6/3. Texture is loamy sand, gravelly sandy loam, gravelly loamy sand, loamy coarse sand, gravelly loamy coarse sand, very gravelly loamy coarse sand, extremely gravelly loamy sand, or sandy loam. The content of clay ranges from 2 to 18 percent. The content of gravel is 0 to 90 percent. Reaction ranges from strongly acid to neutral.

Jocal Series

The Jocal series consists of very deep, well drained soils that formed in colluvium and residuum derived from soft metasedimentary rocks. These soils are in the Sierra Nevada Mountains. Slopes range from 3 to 75 percent. The mean annual precipitation is about 65 inches (1,651 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Typic Haploxerults

Typical Pedon

Jocal loam. (Colors are for dry soil unless otherwise noted.)

Oi—2 to 0 inches (5 to 0 cm); decomposed needles, twigs, and bark.

A—0 to 4 inches (0 to 10 cm); brown (7.5YR 5/4) loam, dark brown (7.5YR 3/4) moist; moderate fine granular structure; soft, very friable, nonsticky, nonplastic; common very fine and fine roots; many very fine irregular pores; moderately acid; clear smooth boundary.

Bt1—4 to 8 inches (10 to 20 cm); yellowish red (5YR 5/6) loam, yellowish red (5YR 4/6) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; many very fine and fine roots; many very fine irregular and tubular pores; common thin clay films in pores; moderately acid; clear smooth boundary.

Bt2—8 to 20 inches (20 to 51 cm); reddish yellow (7.5YR 6/6) clay loam, strong brown (7.5YR 5/6) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine and fine roots; common very fine irregular and tubular pores; common thin clay films in pores; moderately acid; clear smooth boundary.

Bt3—20 to 30 inches (51 to 76 cm); reddish yellow (7.5YR 8/6) clay loam, strong brown (7.5YR 5/6) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky, slightly plastic; common very fine to medium roots; common very fine to medium tubular pores; many thin clay films in pores; strongly acid; clear smooth boundary.

Bt4—30 to 42 inches (76 to 107 cm); reddish yellow (7.5YR 8/6) silty clay loam, strong brown (7.5YR 5/6) moist; weak medium subangular blocky structure; slightly hard, very friable, sticky, slightly plastic; common very fine to medium roots; common very fine to medium tubular pores; common thin clay films in pores; 10 percent saprolitic cobbles and gravel; very strongly acid; abrupt smooth boundary.

Bt5—42 to 59 inches (107 to 150 cm); pink (5YR 7/4) silty clay loam, reddish yellow (5YR 6/6) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine to coarse roots; few very fine and

medium tubular pores; common thin clay films in pores; very strongly acid; clear wavy boundary.

Bt6—59 to 73 inches (150 to 185 cm); mixed pink (5YR 7/4) and light red (2.5YR 6/8) silty clay loam, mixed light reddish brown (5YR 6/4) and red (2.5YR 5/8) moist; massive; soft, very friable, slightly sticky, slightly plastic; few very fine to coarse roots; few very fine and medium tubular pores; few thin clay films in pores; very strongly acid.

Type location: Yuba County, California about 0.45 mile south of Eagleville, approximately 300 feet north and 700 feet west of the southeast corner of sec. 20, T. 20 N., R. 8 E.; 39 degrees, 34 minutes, 18 seconds north latitude and 121 degrees, 5 minutes, 55 seconds west longitude; NAD27; USGS Quad: Strawberry Valley, California.

Range in Characteristics

The depth of the soils is more than 60 inches (152 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July 15 or August 1 to October 15 (about 95 days). Mineralogy is mixed. The content of organic matter is 2 to 5 percent to a depth of 8 inches (20 cm).

The A horizon has dry color of 7.5YR 5/4 or 5YR 5/4 or 4/4. Moist color is 7.5YR 3/4 or 5YR 3/4. Texture is loam. The content of clay ranges from 15 to 27 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 8/6, 6/6, or 4/6 or 5YR 5/6 or 7/4. Moist color is 7.5YR 5/6 or 4/6 or 5YR 4/6, 6/6, or 5/8. Texture is loam, clay loam, or silty clay loam. The content of clay ranges from 27 to 35 percent. Base saturation is 20 to 30 percent. Reaction ranges from very strongly acid to moderately acid.

Jocal Taxadjunct

The Jocal taxadjunct consists of deep, well drained soils that formed in tephra deposited over colluvium and residuum derived from metasediments. These soils are on metamorphic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 70 inches (1,778 mm), and the mean annual air temperature is about 52 degrees F (11 degrees C).

Taxonomic class: Fine-loamy, mixed, semiactive, mesic Andic Haploxerults

Typical Pedon

Jocal taxadjunct, on a southwest-facing slope of 35 percent, under a cover of Sierra mixed conifers, at an elevation of 3,600 feet (1,097 m). When described on 6/20/2004, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 3 inches (0 to 8 cm); slightly decomposed plant material consisting of needles, twigs, and cones; abrupt smooth boundary.

A—3 to 4 inches (8 to 10 cm); brown (7.5YR 4/3) gravelly loam, dark brown (7.5YR 3/2) moist; 12 percent clay; moderate very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; few very fine roots; many very fine irregular pores; 20 percent metasedimentary gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 10.5; abrupt smooth boundary.

Bw—4 to 9 inches (10 to 23 cm); brown (7.5YR 5/4) gravelly loam, brown (7.5YR 4/4) moist; 13 percent clay; moderate very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine and many very fine roots; common very fine and fine tubular pores; 25 percent metasedimentary gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 11.0; abrupt smooth boundary.

Bt1—9 to 19 inches (23 to 48 cm); strong brown (7.5YR 5/6) gravelly loam, strong brown (7.5YR 4/6) moist; 20 percent clay; moderate fine subangular blocky structure; soft, very friable, nonsticky, slightly plastic; common very fine and fine and few medium roots; common very fine and fine tubular pores; 5 percent distinct clay films; 30 percent metasedimentary gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.

Bt2—19 to 33 inches (48 to 84 cm); strong brown (7.5YR 5/6) gravelly loam, strong brown (7.5YR 4/6) moist; 25 percent clay; moderate fine subangular blocky structure; soft, friable, nonsticky, slightly plastic; common very fine and fine and common medium roots; common very fine and fine tubular pores; 20 percent distinct clay films; 30 percent metasedimentary gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.

Bt3—33 to 46 inches (84 to 117 cm); reddish yellow (7.5YR 7/6) very gravelly clay loam, strong brown (7.5YR 4/6) moist; 27 percent clay; moderate fine and medium subangular blocky structure; soft, friable, slightly sticky, slightly plastic; few fine, common medium, and few coarse roots; few very fine tubular pores; 20 percent distinct clay films; 50 percent metasedimentary gravel; very strongly acid, pH 5.0 by Hellige-Truog; clear smooth boundary.

BCt—46 to 52 inches (117 to 132 cm); pink (7.5YR 7/4) extremely gravelly clay loam, strong brown (7.5YR 4/6) moist; 30 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; 10 percent distinct clay films; 75 percent metasedimentary gravel; very strongly acid, pH 4.8 by Hellige-Truog; gradual smooth boundary.

Cr—52 to 68 inches (132 to 173 cm); moderately cemented metasedimentary rock.

Type location: Butte County, California; about 3.5 miles northeast of Clipper Mills, 400 feet west and 1,500 feet south of the northeast corner of sec. 24, T. 20 N., R. 7 E.; 39 degrees, 34 minutes, 49 seconds north latitude and 121 degrees, 7 minutes, 58 seconds west longitude; NAD83; USGS Quad: Clipper Mills, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 47 to 52 degrees F (8 to 11 degrees C). The particle-size control section averages 18 to 30 percent clay and 25 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. Acid-oxalate extractable Al plus ½ Fe ranges from 1.5 to 1.0 percent (by weight). Rock fragments on the surface range from 0 to 15 percent gravel.

The A horizon has dry color of 7.5YR 4/3, 4/6, or 5/4; 5YR 4/6; or 10YR 4/4. Moist color is 7.5YR 3/2, 3/3, or 3/4 or 5YR 3/4. Texture is gravelly loam, gravelly sandy loam, loam, or sandy loam. The content of clay ranges from 9 to 17 percent. The content of gravel is 5 to 20 percent. The content of organic matter is 10 to 14 percent. By sum of cations, base saturation ranges from 15 to 45 percent. NaF pH is 10.5 to 11.8. Reaction ranges from strongly acid to slightly acid.

The Bw horizon has dry color of 7.5YR 4/6, 5/4, or 5/6 or 10YR 5/4 or 6/4. Moist color is 7.5YR 3/3, 3/4, 4/4, or 4/6 or 5YR 3/4. Texture is gravelly loam, gravelly sandy loam, loam, or sandy loam. The content of clay ranges from 10 to 22 percent. The horizon has 0 to 30 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 4 to 8 percent. By sum of cations, base saturation ranges from 10 to 20 percent. NaF pH is 10.5 to 11.8. Reaction ranges from very strongly acid to slightly acid.

The Bt1 and Bt2 horizons have dry color of 7.5YR 5/6 or 10YR 6/4. Moist color is 7.5YR 4/4 or 4/6. Texture is gravelly loam, sandy loam, or clay loam. The content of clay ranges from 15 to 30 percent. The horizons have 0 to 30 percent gravel and 0 to 15 percent cobbles. The content of organic matter is 1 to 3 percent. By sum of

cations, base saturation ranges from 2 to 20 percent. NaF pH is 10.0 to 11.0. Reaction is moderately acid or slightly acid.

The Bt3 horizon has dry color of 7.5YR 6/6 or 7/6 or 10YR 6/6. Moist color is 7.5YR 4/6 or 5/6 or 10YR 5/6. Texture is very gravelly clay loam, very gravelly loam, or very gravelly silt loam. The content of clay ranges from 15 to 30 percent. The horizon has 35 to 50 percent gravel and 0 to 15 percent cobbles. The content of organic matter is 0.3 to 3 percent. By sum of cations, base saturation ranges from 2 to 20 percent. NaF pH is less than 9.8. Reaction ranges from very strongly acid to slightly acid.

The BCt horizon has dry color of 7.5YR 6/4, 6/6, or 7/4 or 10YR 6/6. Moist color is 7.5YR 4/6 or 5/6 or 10YR 5/8. Texture is extremely gravelly clay loam, extremely gravelly silt loam, very gravelly silt loam, very gravelly silty clay loam, or extremely cobbly loam. The content of clay ranges from 15 to 30 percent. The horizon has 0 to 75 percent gravel and 0 to 50 percent cobbles. The content of organic matter is 0.3 to 0.1 percent. By sum of cations, base saturation ranges from 2 to 20 percent. NaF pH is less than 9.8. Reaction ranges from very strongly acid to moderately acid.

The Jocal taxadjunct is a taxadjunct because it has andic soil material at the surface. The difference does not significantly affect the use, management, or interpretations of the soils.

Jokerst Series

The Jokerst series consists of very shallow, poorly drained soils that formed in residuum derived from volcanic mudflow breccia. These soils are in swales and broad planar areas on ridgetops and side slopes on volcanic ridges on Cascade foothills. Slopes range from 0 to 30 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy, mixed, superactive, thermic Lithic Haploxeralfs

Typical Pedon

Jokerst very cobbly loam, on a west-facing slope of 3 percent, under a cover of annual grasses and forbs, at an elevation of 317 feet (97 m). When described on 3/26/1997, the soil was dry from 0 to 1 inch (0 to 2.5 cm) and slightly moist from 1 to 4 inches (2.5 to 10 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 3 cm); reddish yellow (7.5YR 6/6) very cobbly loam, dark reddish brown (2.5YR 3/4) moist; 15 percent clay; weak medium platy structure parting to moderate fine and medium subangular blocky; moderately hard, firm, slightly sticky, slightly plastic; many very fine roots; few very fine vesicular and tubular pores; noneffervescent; 10 percent gravel, 15 percent cobbles, and 10 percent stones; slightly acid, pH 6.4 by pH meter 1:1 water; clear smooth boundary.

Bt—1 to 4 inches (3 to 10 cm); reddish yellow (5YR 6/6) gravelly loam, dark reddish brown (2.5YR 3/4) moist; 18 percent clay; moderate thin and medium platy structure parting to moderate medium subangular blocky; moderately hard, firm, slightly sticky, slightly plastic; common very fine roots; common very fine vesicular and tubular pores; many faint continuous clay films on faces of peds and on rock fragments; common fine irregular iron-manganese masses between peds; noneffervescent; 15 percent gravel, 10 percent cobbles, and 5 percent stones; slightly acid, pH 6.5 by pH meter 1:1 water; abrupt smooth boundary.

R—4 inches (10 cm); indurated volcanic mudflow breccia; roots matted on top of the bedrock; $^{1}/_{16}$-inch (2-mm) manganese capping.

Type location: Butte County, California; about 0.7 mile north of Rock Creek Road and about 2.8 miles east of Meridian Road, approximately 1,625 feet south and 775

feet west of the northeast corner of sec. 16, T. 23 N., R. 1 E.; 39 degrees, 51 minutes, 3.18 seconds north latitude and 121 degrees, 51 minutes, 54.71 seconds west longitude; NAD83; USGS Quad: Richardson Springs SE, California.

Range in Characteristics

The depth to lithic bedrock is 4 to 10 inches (5 to 25 cm). The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 200 days). The particle-size control section averages 18 to 24 percent clay and 10 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the bedrock and the surface of the soil from November through March. Redoximorphic features occur as iron-manganese masses in the A and Bt horizons, iron-manganese concretions in the Bt horizon, and manganese masses in layers 1/16 to 1/8 inch (2 to 4 mm) thick on top of the bedrock. Rock fragments on the surface range from 0 to 10 percent gravel, 2 to 30 percent cobbles, 3 to 50 percent stones, and 0 to 5 percent boulders. Some pedons have an organic mat, 1/16 inch (2 mm) thick, on the surface.

The A horizon has dry color of 5YR 4/6 or 5/6 or 7.5YR 6/6. Moist color is 2.5YR 3/3 or 3/4; 5YR 3/2, 3/4, or 4/3; or 7.5YR 3/2 or 3/3. Texture is loam, gravelly loam, cobbly loam, stony loam, very cobbly loam, or very stony loam. The content of clay ranges from 12 to 21 percent. The horizon has 10 to 25 percent gravel, 10 to 40 percent cobbles, and 0 to 30 percent stones. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 5YR 5/6 or 6/6 or 7.5YR 6/6. Moist color is 2.5YR 3/3 or 3/4, 5YR 4/3 or 4/4, or 7.5YR 3/3 or 3/4. Texture is loam, gravelly loam, or cobbly loam. The content of clay ranges from 16 to 25 percent. The horizon has 10 to 25 percent gravel, 0 to 20 percent cobbles, and 0 to 10 percent stones. Reaction is slightly acid or neutral.

Katskillhill Series

The Katskillhill series consists of deep, moderately well drained soils that formed in residuum and colluvium derived from metavolcanic rocks, mainly greenschist. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada foothills. Slopes range from 2 to 15 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, superactive, thermic Ultic Palexeralfs

Typical Pedon

Katskillhill loam, on an east-facing slope of 8 percent, under a cover of grasses, forbs, and a trace of blue oak, at an elevation of 720 feet (219 m). When described on 6/6/1999, the soil was dry to a depth of 12 inches (31 cm) and slightly moist from 12 to 42 inches (31 to 107 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; 12 percent clay; moderate very fine and fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine roots; many fine and very fine tubular pores; 20 percent fine irregular yellowish red (5YR 5/6) oxidized iron masses throughout; very strongly acid, pH 5.0 by Hellige-Truog; abrupt smooth boundary.

BAt—2 to 8 inches (5 to 20 cm); yellowish red (5YR 5/6) loam, yellowish red (5YR 4/6) moist; 15 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, nonsticky, slightly plastic; many very fine

roots; many fine and very fine tubular pores; 3 percent faint clay films on vertical faces of peds and on surfaces along root channels; 10 percent subangular greenschist gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt1—8 to 12 inches (20 to 30 cm); yellowish red (5YR 4/6) very gravelly loam, reddish brown (5YR 4/4) moist; 25 percent clay; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots between peds; many fine, common coarse, and many very fine tubular pores; 15 percent faint clay films on faces of peds; 60 percent subangular greenschist gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

2Bt2—12 to 19 inches (30 to 48 cm); yellowish red (5YR 4/6) clay, yellowish red (5YR 4/6) moist; 46 percent clay; strong coarse prismatic structure parting to strong medium and coarse subangular blocky; extremely hard, extremely firm, very sticky, very plastic; common very fine roots between peds; common fine and very fine tubular pores; 70 percent prominent clay films on faces of peds; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

2Btss1—19 to 29 inches (48 to 74 cm); yellowish red (5YR 5/6) clay, yellowish red (5YR 4/6) moist; 52 percent clay; strong coarse subangular blocky structure; extremely hard, extremely firm, very sticky, very plastic; few very fine roots between peds; few very fine tubular pores; 35 percent prominent slickensides; 70 percent prominent clay films on faces of peds; 10 percent fine spherical manganese concretions; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.

2Btss2—29 to 42 inches (74 to 107 cm); yellowish red (5YR 5/6) clay, yellowish red (5YR 4/6) moist; 52 percent clay; strong coarse subangular blocky structure; extremely hard, extremely firm, very sticky, very plastic; few very fine roots between peds; few fine and very fine tubular pores; 15 percent prominent slickensides; 70 percent prominent clay films on faces of peds; 1 percent fine spherical manganese concretions; 10 percent subangular greenschist gravel; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt wavy boundary.

2R—42 inches (107 cm); unweathered, indurated greenschist.

Type location: Butte County, California; about 2.8 miles southeast of Wyandotte, approximately 1,600 feet south and 1,900 feet west of the northeast corner of sec. 5, T. 18 N., R. 5 E.; 39 degrees, 26 minutes, 57.82 seconds north latitude and 121 degrees, 25 minutes, 58.54 seconds west longitude; NAD83; USGS Quad: Bangor, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 150 days). The particle-size control section averages 35 to 45 percent clay and 10 to 20 percent rock fragments, mostly gravel. Mineralogy is mixed. Slickensides range from 15 to 35 percent in the 2Btss horizon. Rock fragments on the surface range from 0 to 3 percent gravel. Some pedons have a BA horizon.

The A horizon has dry color of 7.5YR 5/4 or 5/6 or 10YR 5/4. Moist color is 7.5YR 3/4, 4/3, or 4/4 or 10YR 4/4. Texture is loam. The content of clay ranges from 12 to 18 percent. The content of gravel is 0 to 5 percent. Redoximorphic features, such as soft oxidized iron masses with dry color of 5YR 5/6, can occur in this horizon. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 3 to 9 percent. Reaction ranges from very strongly acid to slightly acid.

The BAt horizon has dry color of 7.5YR 5/6 or 5YR 5/6. Moist color is 5YR 4/4 or 4/6. Texture is loam. The content of clay ranges from 15 to 20 percent. The content of

gravel is 4 to 10 percent. By sum of cations, base saturation ranges from 55 to 73 percent. The content of organic matter is 1 to 4 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 5YR 4/6 or 5/6. Moist color is 5YR 4/4 or 4/6. Texture is loam, gravelly loam, or very gravelly loam. The content of clay ranges from 21 to 25 percent. The content of gravel is 5 to 60 percent. By sum of cations, base saturation ranges from 65 to 74 percent. The content of organic matter is 1 to 1.5 percent. Reaction is moderately acid or slightly acid.

The 2Bt horizon has dry color of 5YR 5/6 or 5/8 or 7.5YR 5/4, 5/6, or 6/6. Moist color is 5YR 4/4 or 4/6 or 7.5YR 4/4 or 4/6. Texture is clay loam, clay, or gravelly clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 0 to 20 percent. By sum of cations, base saturation ranges from 75 to 85 percent. The content of organic matter is 0.5 to 1.0 percent. Reaction ranges from very strongly acid to slightly acid.

The 2Btss horizon has dry color of 5YR 5/6, 7.5YR 5/6, or 10YR 6/6. Moist color is 5YR 4/6 or 7.5YR 4/6 or 5/6. Texture is clay. The content of clay ranges from 45 to 55 percent. The content of gravel is 0 to 10 percent. Redoximorphic features, such as manganese concretions, can occur in this horizon. The content of organic matter is 0 to 0.5 percent. Reaction ranges from neutral to moderately alkaline.

Kimball Series

The Kimball series consists of very deep, well drained soils that formed in alluvium derived from igneous and metamorphic rocks. These soils are on low terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, active, thermic Mollic Palexeralfs

Typical Pedon

Kimball loam, on a east-facing slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 100 feet (30 m). (Colors are for dry soil unless otherwise noted.)

Ap1—0 to 2 inches (0 to 5 cm); brown (7.5YR 4/4) loam, dark brown (7.5YR 3/4) moist; 18 percent clay; moderate fine and medium granular structure; soft, friable, nonsticky, nonplastic; many very fine roots; many very fine tubular pores; slightly acid, pH 6.4; abrupt smooth boundary.

Ap2—2 to 4 inches (5 to 10 cm); brown (7.5YR 4/4) loam, dark brown (7.5YR 3/4) moist; 20 percent clay; massive; hard, friable, nonsticky, nonplastic; many very fine roots; many very fine tubular pores; slightly acid, pH 6.3; abrupt wavy boundary.

Ap3—4 to 6 inches (10 to 15 cm); brown (7.5YR 4/4) loam, dark brown (7.5YR 3/4) moist; 21 percent clay; moderate thin platy structure; hard, friable, nonsticky, nonplastic; common very fine roots; many fine tubular pores; slightly acid, pH 6.2; clear smooth boundary.

A—6 to 10 inches (15 to 25 cm); brown (7.5YR 4/4) loam, dark brown (7.5YR 3/4) moist; 23 percent clay; massive; hard, friable, nonsticky, nonplastic; many very fine roots; many fine tubular pores; slightly acid, pH 6.3; clear smooth boundary.

BAt—10 to 17 inches (25 to 43 cm); reddish brown (5YR 4/4) loam, dark reddish brown (5YR 3/4) moist; 25 percent clay; massive; hard, friable, slightly sticky, slightly plastic; common very fine roots; few fine and many very fine tubular pores; 10 percent clay films on surfaces along pores; slightly acid, pH 6.3; abrupt wavy boundary.

2Btss—17 to 34 inches (43 to 86 cm); reddish brown (5YR 4/4) clay, reddish brown (5YR 4/4) moist; 47 percent clay; moderate coarse prismatic structure; extremely

hard, very firm, moderately sticky, very plastic; common very fine roots between peds; common very fine tubular pores; 5 percent slickensides and 80 percent continuous clay films on surfaces along pores, on faces of peds, and as bridges; slightly acid, pH 6.6; gradual wavy boundary.

2Bt—34 to 46 inches (86 to 117 cm); brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; 33 percent clay; massive; very hard, firm, slightly sticky, slightly plastic; few very fine roots; many very fine tubular pores; 60 percent continuous clay films on surfaces along pores; 1 percent manganese coatings; neutral, pH 7.1; diffuse irregular boundary.

2BC—46 to 64 inches (117 to 163 cm); brown (7.5YR 5/4) sandy clay loam, dark brown (7.5YR 3/4) moist; 30 percent clay; massive; hard, firm, slightly sticky, slightly plastic; few roots; many very fine tubular pores; neutral, pH 6.8.

Type location: Butte County, California; about 2 miles northwest of Honcut, approximately 1,850 feet south and 2,050 feet west of the northeast corner of sec. 7, T. 17 N., R. 4 E.; 39 degrees, 20 minutes, 49 seconds north latitude and 121 degrees, 33 minutes, 46 seconds west longitude; NAD27; USGS Quad: Honcut, California.

Range in Characteristics

The depth of the soils is more than 80 inches (203 cm). The mean annual soil temperature is 61 to 65 degrees F (16 to 18 degrees C). The particle-size control section averages 40 to 45 percent clay and 0 to 10 percent rock fragments, mostly gravel. Mineralogy is mixed.

The Ap and A horizons have dry color of 7.5YR 4/4, 4/6, or 5/4 or 5YR 4/6. Moist color is 7.5YR 3/4 or 5YR 3/4. Texture is loam. The content of clay ranges from 10 to 15 percent. The content of gravel is 0 to 15 percent. The content of organic matter is 0.5 to 3 percent. Reaction is slightly acid or neutral.

The BAt horizon has dry color of 5YR 4/4 or 5/6. Moist color is 5YR 3/4 or 4/4. Texture is loam or clay loam. The content of clay ranges from 24 to 30 percent. The content of gravel is 0 to 15 percent. The content of organic matter is 0 to 0.5 percent. Reaction is slightly acid or neutral.

The 2Btss horizon has dry color of 5YR 4/4 or 5/4 or 7.5YR 5/4. Moist color is 5YR 4/4 or 7.5YR 4/4. Texture is clay. The content of clay ranges from 40 to 50 percent. The content of gravel is 0 to 15 percent. The content of organic matter is 0 to 0.5 percent. Reaction is neutral.

The 2Bt horizon has dry color of 5YR 4/4 or 5/4 or 7.5YR 5/4. Moist color is 5YR 4/4 or 7.5YR 4/4. Texture is sandy clay loam or clay loam. The content of clay ranges from 30 to 40 percent. The content of gravel is 0 to 15 percent. The content of organic matter is 0 to 0.5 percent. Reaction is neutral.

The 2BC horizon has dry color of 7.5YR 5/4 or 5YR 5/4. Moist color is 7.5YR 3/4 or 4/4. Texture is sandy clay loam. The content of clay ranges from 27 to 35 percent. The content of gravel is 0 to 15 percent. The content of organic matter is 0 to 0.5 percent. Reaction ranges from slightly acid to slightly alkaline.

Kusalslough Series

The Kusalslough series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are on the margins of flood plains and flood basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (17 degrees C).

Taxonomic class: Fine, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents

Typical Pedon

Kusalslough silty clay loam, on a slope of less than 1 percent, in a walnut orchard, at an elevation of 127 feet (39 m). When described on 5/24/1994, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Ap1—0 to 4 inches (0 to 10 cm); pale brown (10YR 6/3) silty clay loam, dark grayish brown (10YR 4/2) moist; 31 percent clay; strong very thick platy structure parting to strong thin and medium platy; hard, firm, slightly sticky, slightly plastic; few very fine roots; few very fine and fine tubular pores; moderately acid, pH 5.6 by Hellige-Truog; clear smooth boundary.

Ap2—4 to 12 inches (10 to 30 cm); pale brown (10YR 6/3) silty clay loam, dark grayish brown (10YR 4/2) moist; 32 percent clay; moderate coarse subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; few very fine to coarse roots; common fine and medium tubular pores; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

Bw—12 to 21 inches (30 to 53 cm); pale brown (10YR 6/3) and brown (10YR 5/3) silty clay loam, brown (10YR 4/3) and dark grayish brown (10YR 4/2) moist; 35 percent clay; moderate medium and coarse subangular blocky structure; soft, very friable, moderately sticky, moderately plastic; few medium and coarse and common very coarse roots; many very fine and common fine tubular pores; neutral, pH 6.8 by Hellige-Truog; gradual smooth boundary.

Ab—21 to 31 inches (53 to 79 cm); grayish brown (10YR 5/2) silty clay loam, dark grayish brown (10YR 4/2) moist; 37 percent clay; moderate medium and coarse subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few medium, common coarse, and many very coarse roots; common fine and medium tubular pores; common fine distinct brown (7.5YR 4/4 moist) irregularly shaped oxidized iron masses; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bwb1—31 to 41 inches (79 to 104 cm); brown (10YR 5/3) silty clay loam, dark grayish brown (10YR 4/2) moist; 35 percent clay; moderate medium and coarse subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few fine and common coarse and very coarse roots; common fine and medium tubular pores; common fine distinct brown (7.5YR 4/4 moist) irregularly shaped oxidized iron masses; slightly alkaline, pH 7.5 by Hellige-Truog; abrupt smooth boundary.

Bwb2—41 to 57 inches (104 to 145 cm); grayish brown (10YR 5/2) silty clay, dark grayish brown (10YR 4/2) moist; 45 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, very sticky, very plastic; few fine to very coarse roots; common fine tubular pores; few fine distinct reddish brown (5YR 4/4 moist) irregularly shaped oxidized iron masses; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bwb3—57 to 69 inches (145 to 175 cm); grayish brown (10YR 5/2) silty clay, dark grayish brown (10YR 4/2) moist; 53 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, very sticky, very plastic; few medium roots; few fine and medium tubular pores; slightly alkaline, pH 7.5 by Hellige-Truog; gradual wavy boundary.

Bwb4—69 to 80 inches (175 to 203 cm); grayish brown (10YR 5/2) silty clay, brown (10YR 4/3) moist; 49 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, very sticky, very plastic; few fine tubular pores; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 4 miles west of Chico, approximately 4,625 feet west of Mt. Diablo base meridian and 200 feet south of Grape Way; in an unsectionized area in the Arroyo Chico Land Grant; 39 degrees, 43 minutes, 2

seconds north latitude and 121 degrees, 56 minutes, 5 seconds west longitude; NAD27; USGS Quad: Ord Ferry, California.

Range in Characteristics

The thickness of the solum is more than 60 inches (152 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May 1 to October 31 (about 170 to 190 days) and moist in all parts from about January 1 to March 31. The particle-size control section averages 35 to 40 percent clay and 50 to 60 percent silt. Mineralogy is mixed. A fluctuating water table can occur at a depth of 14 to 72 inches (36 to 183 cm) from December through May. Redoximorphic features, such as soft oxidized iron masses with color of 7.5YR 4/6 or 4/4 or 5YR 4/4 moist, occur in the Bw, Ab, and Bwb horizons.

The Ap horizon has dry color of 10YR 6/2 or 6/3. Moist color is 10YR 4/2 or 4/3. Texture is silty clay loam. The content of clay ranges from 28 to 35 percent. The content of organic matter is 1 to 4 percent. Reaction ranges from moderately acid to neutral.

The Bw horizon has dry color of 10YR 5/2, 5/3, or 6/3. Moist color is 10YR 3/3, 4/2, or 4/3. Texture is clay loam or silty clay loam. The content of clay ranges from 30 to 40 percent. The content of organic matter is 0.5 to 2 percent. Reaction is neutral or slightly alkaline.

The Ab horizon has dry color of 10YR 4/2, 4/3, or 5/2. Moist color is 10YR 3/1, 3/2, 3/3, or 4/2. Texture is clay loam or silty clay loam. The content of clay ranges from 30 to 40 percent. The content of organic matter is 1 to 3 percent. Reaction is neutral or slightly alkaline.

The Bwb horizon has dry color of 10YR 4/2, 4/3, 5/2, or 5/3. Moist color is 10YR 3/3, 3/4, 4/2, 4/3, or 4/4. Texture is silty clay loam or clay loam in the upper part of the horizon and clay or silty clay in the lower part. The content of clay ranges from 35 to 55 percent. The content of organic matter is 0.1 to 2 percent. Reaction is neutral or slightly alkaline.

Lavatop Series

The Lavatop series consists of moderately deep, well drained soils that formed in mixed tephra, residuum, and colluvium derived from Lovejoy basalt. These soils are on the tops and side slopes of basalt ridges on volcanic Sierra Nevada mountains. Slopes range from 0 to 30 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Medial-skeletal, amorphic, mesic Humic Haploxerands

Typical Pedon

Lavatop gravelly medial fine sandy loam, on a south-facing slope of 2 percent, under a cover of greenleaf manzanita, ponderosa pine, and California black oak, at an elevation of 4,210 feet (1,283 m). When described on 6/19/1995, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1.27 cm); litter of pine needles, leaves, cones, and twigs.

A—0.5 inch to 4 inches (1.27 to 9 cm); dark brown (10YR 3/3) gravelly medial fine sandy loam, very dark grayish brown (10YR 3/2) moist; 18 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; many fine and medium and few very fine roots; many very fine irregular pores; noneffervescent; 25 percent subangular basalt gravel; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 10.6; clear smooth boundary.

Bw1—4 to 15 inches (9 to 41 cm); brown (10YR 4/3) very gravelly medial sandy loam, very dark grayish brown (10YR 3/2) moist; 20 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, slightly plastic; many fine and medium and few coarse and very coarse roots; many very fine irregular pores; noneffervescent; 40 percent subangular basalt gravel; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 10.9; clear smooth boundary.

Bw2—15 to 26 inches (41 to 66 cm); dark yellowish brown (10YR 4/4) extremely gravelly medial sandy loam, dark brown (10YR 3/3) moist; 18 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, slightly plastic; many medium roots; many very fine irregular pores; noneffervescent; 30 percent subangular basalt gravel and 50 percent subangular basalt cobbles; strongly acid, pH by 5.3 by pH meter 1:1 water; NaF pH 10.6; abrupt smooth boundary.

R—26 inches (66 cm); fractured, indurated basalt.

Type location: Butte County, California; about 6.1 miles east of Camp Eighteen, approximately 1,250 feet east and 250 feet north of the southwest corner of sec. 36, T. 21 N., R. 7 E.; 39 degrees, 37 minutes, 45.8 seconds north latitude and 121 degrees, 8 minutes, 54 seconds west longitude; NAD27; USGS Quad: Cascade, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 47 to 54 degrees F (11 to 12 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 18 to 20 percent clay and 45 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is amorphic. By ammonium acetate, base saturation ranges from 9 to 23 percent to a depth of 25.5 inches (66 cm). By ammonium acetate, CEC ranges from 36 to 40 to a depth of 25.5 inches (66 cm). Acid oxalate extractable Al plus ½ Fe ranges from 2.9 to 3.7 to a depth of 25.5 inches (66 cm). P retention ranges from 85 to 96 to a depth of 25.5 inches (66 cm). Rock fragments on the surface range from 5 to 30 percent gravel, 0 to 40 percent cobbles, and 0 to 30 percent stones.

The A horizon has dry color of 10YR 3/3. Moist color is 10YR 3/2. Texture generally is gravelly medial fine sandy loam, but in some pedons it is extremely gravelly medial fine sandy loam, extremely cobbly medial fine sandy loam, medial loam, or gravelly medial loam. The content of clay ranges from 18 to 20 percent. The horizon has 10 to 40 percent gravel and 0 to 40 percent cobbles. The content of organic matter is 10 to 15 percent. NaF pH is 10.5 to 11.0. Reaction is strongly acid or moderately acid.

The Bw horizon has dry color of 10YR 4/3 or 4/4. Moist color is 10YR 3/2, 3/3, or 4/2. Texture is very gravelly medial sandy loam, extremely gravelly medial sandy loam, extremely cobbly medial sandy loam, or extremely stony medial fine sandy loam. The content of clay ranges from 18 to 20 percent. The horizon has 30 to 40 percent gravel, 0 to 50 percent cobbles, 0 to 35 percent stones, and 0 to 25 percent boulders. The content of organic matter is 5 to 12 percent. NaF pH is 10.5 to 11.0. Reaction is strongly acid.

Lewisflat Series

The Lewisflat series consists of very deep, well drained soils that formed in tephra over residuum and colluvium weathered from quartz diorite. These soils are on side slopes on granitic Sierra Nevada mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 75 inches (1,905 mm), and the mean annual air temperature is about 52 degrees F (11 degrees C).

Taxonomic class: Fine-loamy, mixed, semiactive, mesic Andic Haploxerults

Typical Pedon

Lewisflat loam, on a northeast-facing slope of 3 percent, under a cover of mixed conifers, at an elevation of 3,675 feet (1,120 m). When described on 11/1/1995, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 3 inches (0 to 8 cm); litter of needles, cones, and twigs.

A1—3 to 5 inches (8 to 13 cm); brown (10YR 4/3) loam, brown (7.5YR 4/3) moist; 14 percent clay; moderate medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; many very fine roots; few very fine tubular pores; noneffervescent; 10 percent rounded gravel; strongly acid, pH 5.2 by pH meter 1:1 water; NaF pH 10.8; abrupt smooth boundary.

A2—5 to 9 inches (13 to 23 cm); strong brown (7.5YR 5/6) loam, brown (7.5YR 4/4) moist; 17 percent clay; moderate medium subangular blocky structure; slightly hard, firm, nonsticky, slightly plastic; common very fine and fine roots; common very fine tubular pores; noneffervescent; 5 percent rounded gravel; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 10.2; abrupt smooth boundary.

Bt1—9 to 18 inches (23 to 46 cm); strong brown (7.5YR 5/6) loam, strong brown (7.5YR 5/6) moist; 25 percent clay; moderate medium subangular blocky structure; slightly hard, friable, nonsticky, moderately plastic; common very fine and fine roots; common very fine tubular pores; few clay films on faces of peds and in pores; noneffervescent; 5 percent rounded gravel; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 9.7; clear smooth boundary.

2Bt2—18 to 33 inches (46 to 84 cm); reddish yellow (7.5YR 6/6) loam, strong brown (7.5YR 5/6) moist; 24 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine and fine and few medium and coarse roots; common very fine tubular pores; common clay films on faces of peds and in pores; noneffervescent; 2 percent subrounded gravel; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 9.4; clear smooth boundary.

2Bt3—33 to 49 inches (84 to 125 cm); reddish yellow (7.5YR 6/6) loam, strong brown (7.5YR 5/6) moist; 19 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common fine and medium and few coarse roots; few very fine tubular pores; few clay films on faces of peds and in pores; noneffervescent; strongly acid, pH 5.1 by pH meter 1:1 water; NaF pH 9.5; clear smooth boundary.

2BCt1—49 to 65 inches (125 to 165 cm); reddish yellow (7.5YR 7/6) loam, strong brown (7.5YR 5/6) moist; 12 percent clay; moderate medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common fine and medium and few coarse roots; few very fine tubular pores; few clay films on faces of peds and in pores; noneffervescent; strongly acid, pH 5.1 by pH meter 1:1 water; gradual smooth boundary.

2BCt2—65 to 75 inches (165 to 190 cm); reddish yellow (7.5YR 7/6) loam, reddish yellow (7.5YR 6/6) moist; 12 percent clay; weak medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; few fine and medium roots; few very fine tubular pores; few clay films in root channels and pores; very strongly acid, pH 5.0 by pH meter 1:1 water.

Type location: Butte County, California; about 1.1 miles north of Strawberry Valley, approximately 1,400 feet east and 2,000 feet south of the northwest corner of sec. 20, T. 20 N., R. 8 E.; 39 degrees, 34 minutes, 47.5 seconds north latitude and 121 degrees, 6 minutes, 37.5 seconds west longitude; NAD27; USGS Quad: Strawberry Valley, California.

Range in Characteristics

The depth to paralithic bedrock (quartz diorite) is more than 60 inches (152 cm). The mean annual soil temperature is 52 to 56 degrees F (11 to 13 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 1 (about 90 to 110 days) The particle-size control section averages 18 to 27 percent clay and 0 to 20 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 8 to 10 percent to a depth of 2 inches (5 cm), 1 to 2 percent from 2 to 15 inches (5 to 38 cm), and less than 0.6 percent from 15 to 72 inches (38 to 183 cm). By sum of cations, base saturation ranges from 9 to 32 percent in the argillic horizon. Acid oxalate extractable Al plus ½ Fe is 1 to 2 to a depth of 18 inches (46 cm). Rock fragments on the surface range from 0 to 10 percent gravel. Some pedons have a 2Bw or 2C horizon below the argillic horizon.

The A horizon has dry color of 7.5YR 4/2, 5/4, 5/6, 6/4, or 6/6 or 10YR 4/3 or 6/3. Moist color is 7.5YR 3/2, 3/3, 3/4, 4/3, 4/4, or 4/6 or 10YR 5/4. Texture is dominantly loam, but in some pedons it is sandy loam or coarse sandy loam. The content of clay ranges from 5 to 18 percent. The content of gravel is 5 to 10 percent. NaF pH is 10.0 to 11.5. Reaction ranges from strongly acid to slightly acid.

The Bt horizon has dry color of 7.5YR 5/6, 6/4, 6/6, 7/4, or 7/6 or 5YR 5/6. Moist color is 7.5YR 4/4, 4/6, 5/4, 5/6, 5/8, or 6/8; 5YR 4/4, 5/6, or 5/8; or 10YR 5/4 or 5/6. Texture is loam, gravelly loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 18 to 27 percent. The content of gravel is 0 to 20 percent. NaF pH is 9.7 to 10.0. Reaction is strongly acid or moderately acid.

The 2Bt horizon has dry color of 7.5YR 5/6, 6/4, 6/6, 7/4, or 7/6 or 5YR 5/6. Moist color is 7.5YR 4/4, 4/6, 5/4, 5/6, 5/8, or 6/8; 5YR 4/4, 5/6, or 5/8; or 10YR 5/4 or 5/6. Texture is loam, gravelly loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 18 to 27 percent. The content of gravel is 0 to 20 percent. NaF pH is 9.4 to 9.0. Reaction is strongly acid or moderately acid.

The 2BCt horizon has dry color of 7.5YR 6/6 or 7/6. Moist color is 7.5YR 5/6, 6/6, 5/8, or 6/8 or 10YR 5/6, 6/6, or 7/6. Texture is loam, gravelly loam, sandy clay loam, sandy loam, gravelly sandy loam, or fine sandy loam. The content of clay ranges from 8 to 27 percent. The content of gravel is 0 to 20 percent. NaF pH is 9.0 to 9.5. Reaction ranges from very strongly acid to moderately acid.

The 2Bw horizon, where it occurs, has dry color of 7.5YR 6/6 or 7/6. Moist color is 7.5YR 5/6, 6/6, 5/8, or 6/8 or 10YR 5/6, 6/6, or 7/6. Texture is loam or sandy loam. The content of clay ranges from 8 to 18 percent. The content of gravel is 0 to 15 percent. NaF pH is 9.0 to 9.5. Reaction ranges from very strongly acid to moderately acid.

The 2C horizon, where it occurs, has dry color of 7.5YR 6/6 or 7/6. Moist color is 7.5YR 5/6, 6/6, 5/8, or 6/8 or 10YR 5/6, 6/6, or 7/6. Texture is loam or sandy loam. The content of clay ranges from 8 to 18 percent. The content of gravel is 0 to 15 percent. NaF pH is 9.0 to 9.5. Reaction ranges from very strongly acid to moderately acid.

Lithic Xerorthents

Lithic Xerorthents consist of very shallow, somewhat excessively drained soils that formed in residuum derived from quartz diorite. These soils are on ridgetops and side slopes on granitic Sierra Nevada mountains. Slopes range from 12 to 70 percent. The mean annual precipitation is about 55 inches (1,397 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Loamy, mixed, active, nonacid, mesic Lithic Xerorthents

Typical Pedon

Lithic Xerorthents gravelly sandy loam, on a southwest-facing slope of 42 percent, under a cover of canyon live oak, whiteleaf manzanita, California black oak, and scattered conifers, at an elevation of 2,690 feet (807 m). When described on 9/7/2000, the soil was slightly moist to a depth of 2 inches (5 cm) and dry from 2 to 8 inches (5 to 20 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); slightly decomposed plant material; abrupt smooth boundary.

A—2 to 4 inches (5 to 10 cm); very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 4/3) moist; 6 percent clay; single grain; loose, very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine irregular pores; 20 percent subrounded quartz diorite gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bw—4 to 8 inches (10 to 20 cm); light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; 8 percent clay; single grain; loose, very friable, nonsticky, nonplastic; many fine and medium and many coarse roots; many very fine irregular pores; 10 percent subrounded quartz diorite gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.

R—8 inches (20 cm); indurated quartz diorite bedrock.

Type location: Butte County, California; about 1.2 miles northeast of Berry Creek, approximately 2,700 feet east and 700 feet south of the northwest corner of sec. 26, T. 21 N., R. 5 E.; 39 degrees, 39 minutes, 11 seconds north latitude and 121 degrees, 23 minutes, 4 seconds west longitude; NAD83; USGS Quad: Berry Creek, California.

Range in Characteristics

The depth to lithic bedrock is 1 to 10 inches (3 to 25 cm). The mean annual soil temperature is 47 to 59 degrees F (8 to 15 degrees C). The particle-size control section averages 6 to 8 percent clay and 10 to 20 percent rock fragments, mostly fine gravel. Mineralogy is mixed. Rock fragments on the surface range from 15 to 50 percent gravel, 0 to 30 percent cobbles, 0 to 50 percent stones, and 0 to 50 percent boulders.

The A horizon has dry color of 10YR 6/2, 6/3, or 7/3. Moist color is 10YR 4/2 or 4/3. Texture is gravelly sandy loam or sandy loam. The content of clay ranges from 6 to 8 percent. The content of gravel is 5 to 35 percent. The content of organic matter is 1 to 5 percent. By ammonium acetate, base saturation ranges from 60 to 70 percent. Reaction is strongly acid or moderately acid.

The Bw horizon has dry color of 10YR 6/6, 6/4, 7/3, or 8/2. Moist color is 10YR 4/3, 4/4, 5/3, or 6/4. Texture is sandy loam, coarse sandy loam, or gravelly sandy loam. The content of clay ranges from 6 to 10 percent. The content of gravel is 10 to 35 percent. The content of organic matter is 0.1 to 1.5 percent. By ammonium acetate, base saturation ranges from 50 to 60 percent. Reaction is strongly acid or moderately acid.

Liveoak Series

The Liveoak series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are in distributary channels on stream terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Haploxerolls

Typical Pedon

Liveoak sandy loam, on a slope of 0 to 2 percent, under a cover of prune trees, at an elevation of 95 feet (29 m). (Colors are for dry soil unless otherwise noted.)

Ap1—0 to 4 inches (0 to 10 cm); yellowish brown (10YR 5/4) sandy loam, dark brown (10YR 3/3) moist; 16 percent clay; moderate thick platy structure parting to moderate coarse subangular blocky; soft, very friable, slightly sticky, nonplastic; common very fine roots; many very fine irregular and few very fine vesicular pores; 2 percent gravel; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

Ap2—4 to 17 inches (10 to 43 cm); yellowish brown (10YR 5/4) sandy loam, dark brown (10YR 3/3) moist; 18 percent clay; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; common very fine and few fine and medium roots; common very fine irregular, many very fine tubular, and few very fine vesicular pores; 2 percent gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

Bw1—17 to 37 inches (43 to 94 cm); yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 3/4) moist; 18 percent clay; moderate medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; few very fine and fine roots; many very fine irregular, common very fine and fine tubular, and few very fine and fine vesicular pores; faint patchy clay bridges between sand grains; 2 percent gravel; neutral, pH 6.9 by Hellige-Truog; gradual smooth boundary.

Bw2—37 to 48 inches (94 to 122 cm); yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 3/4) moist; 20 percent clay; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; few very fine and fine roots; many very fine irregular, common very fine and fine tubular, and few very fine and fine vesicular pores; 2 percent gravel; neutral, pH 6.9 by Hellige-Truog; gradual smooth boundary.

C1—48 to 61 inches (122 to 155 cm); yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 3/4) moist; 12 percent clay; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; few very fine roots; many very fine irregular, common very fine and fine tubular, and few very fine and fine vesicular pores; common fine faint dark grayish brown (10YR 4/2) irregularly shaped iron depletions on surfaces of root channels; 8 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

C2—61 to 71 inches (155 to 180 cm); yellowish brown (10YR 5/4) loamy sand, dark yellowish brown (10YR 3/4) moist; 6 percent clay; weak fine and medium subangular blocky structure; loose, nonsticky, nonplastic; few very fine roots; many very fine irregular pores; common fine faint dark grayish brown (10YR 4/2) irregularly shaped iron depletions on surfaces of root channels; 10 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

C3—71 to 75 inches (180 to 190 cm); yellowish brown (10YR 5/4) gravelly loamy sand, dark brown (10YR 3/3) moist; 5 percent clay; single grain; loose, nonsticky, nonplastic; many very fine irregular pores; 18 percent gravel; neutral, pH 6.8 by Hellige-Truog.

Type location: Butte County, California; about 0.25 mile east of Gridley, approximately 1,550 feet north and 2,960 feet east of the southeast corner of sec. 36, T. 18 N., R. 2 E.; in an unsectionized area in the Boga Land Grant; 39 degrees, 22 minutes, 03 seconds north latitude and 121 degrees, 40 minutes, 36 seconds west longitude; NAD27; USGS Quad: Gridley, California.

Range in Characteristics

The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from June 15 to October 31 (about 138 days). The particle-size control section averages 18 to 25 percent clay. Mineralogy is mixed. The

content of organic matter is 2 to 3 percent to a depth of 17 inches (43 cm), 1 to 2 percent from 17 to 61 inches (43 to 155 cm), and 0.5 to 1 percent from 61 to 80 inches (155 to 203 cm). Redoximorphic features, such as iron depletions that are along root channels and have color of 10YR 4/2, occur below a depth of 40 inches (102 cm) in some pedons. A fluctuating water table can occur at a depth of 11 to 65 inches (28 to 165 cm) from December through April.

The Ap horizon has dry color of 10YR 5/4, 5/3, 4/4, or 3/4. Moist color is 10YR 3/3 or 3/2. Texture is sandy loam or sandy clay loam. The content of clay ranges from 16 to 25 percent. The content of rock fragments, mostly gravel, ranges from 0 to 5 percent. Reaction is slightly acid or neutral.

The Bw horizon has dry color of 10YR 5/4, 5/3, 4/4, or 3/4. Moist color is 10YR 3/3 or 3/2. Texture is sandy loam or sandy clay loam. The content of clay ranges from 18 to 25 percent. The content of rock fragments, mostly gravel, ranges from 0 to 10 percent. Reaction is neutral.

The C horizon has dry color of 10YR 5/4 or 6/4. Moist color is 10YR 4/4, 4/3, or 3/3. Texture is gravelly loamy sand, gravelly sandy loam, loamy sand, or sandy loam. The content of clay ranges from 5 to 19 percent. The content of rock fragments, mostly gravel, ranges from 0 to 20 percent. Reaction is neutral.

Liveoak Taxadjunct

The Liveoak taxadjunct consists of deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on mounds on remnant terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 16 inches (406 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Calcixerepts

Typical Pedon

Liveoak taxadjunct loam, under a cover of annual grasses and tules, at an elevation of 55 feet (17 m). (Colors are for dry soil unless otherwise noted.)

Ak—0 to 6 inches (0 to 15 cm); light brownish gray (10YR 6/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many medium and fine roots; many very fine and fine tubular pores; disseminated lime; 11 percent calcium carbonate equivalent; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk1—6 to 16 inches (15 to 41 cm); pale brown (10YR 6/3) loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; soft, friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine and fine tubular pores; disseminated lime; violently effervescent; 21 percent calcium carbonate equivalent; moderately alkaline; clear wavy boundary.

Bk2—16 to 30 inches (41 to 76 cm); pale brown (10YR 6/3) loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; soft, friable, slightly sticky, slightly plastic; common very fine roots; disseminated lime; 26 percent calcium carbonate equivalent; many coarse and very coarse rounded siliceous and calcareous concretions; violently effervescent; moderately alkaline; clear irregular boundary.

Bkq—30 to 39 inches (76 to 99 cm); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; massive; soft, friable, slightly sticky, slightly plastic; common very fine roots; common very fine and fine tubular pores; disseminated lime; 29 percent calcium carbonate equivalent; many medium rounded siliceous and calcareous concretions; violently effervescent; moderately alkaline; clear irregular boundary.

B´k3—39 to 54 inches (99 to 137 cm); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; massive; soft, friable, slightly sticky, slightly plastic; few very fine roots; many very fine tubular pores; disseminated lime and many fine seams of lime; 27 percent calcium carbonate equivalent; violently effervescent; moderately alkaline; abrupt smooth boundary.

Bkqm—54 to 63 inches (137 to 160 cm); brown (10YR 5/3), indurated duripan, dark brown (10YR 3/3) moist; massive; extremely hard; continuous and indurated with silica and lime; violently effervescent; disseminated lime; abrupt smooth boundary.

2C—63 inches (160 cm); pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; loose, nonsticky, nonplastic; neutral.

Type location: Sutter County, California; about 4.7 miles west of Pennington, approximately 2,800 feet east and 320 feet south of the northwest corner of sec. 32, T. 17 N., R. 1 E.; 39 degrees, 17 minutes, 18 seconds north latitude and 121 degrees, 52 minutes, 52 seconds west longitude; NAD27; USGS Quad: Sanborn Slough, California.

Range in Characteristics

Depth to the duripan ranges from 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 65 degrees F (17 to 18 degrees C). The particle-size control section ranges from 18 to 25 percent clay. Mineralogy is mixed. The soils are calcareous throughout. The content of organic matter is less than 1 percent throughout the profile. A fluctuating water table can occur at a depth of 48 to 60 inches (122 to 152 cm) from December through April.

The Ak horizon has dry color of 10YR 6/2, 7/2, or 6/3. Moist color is 10YR 3/2, 4/2, 3/3, or 4/3. Texture is loam. The content of clay ranges from 18 to 25 percent. Reaction is moderately alkaline.

The Bk horizon has dry color of 10YR 5/3, 6/2, 6/3, 6/4, or 7/3. Moist color is 10YR 3/2, 3/3, or 4/3. Texture is loam. The content of clay ranges from 18 to 25 percent. Reaction is moderately alkaline.

The Liveoak taxadjunct is a taxadjunct because it has a duripan between depths of 40 and 60 inches. This difference does not significantly affect the use, management, or interpretations of the soils.

Llanoseco Series

The Llanoseco series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in flood basins. Slopes range from 0 to 2 percent. The mean annual precipitation is about 18 (457 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Chromic Haploxererts

Typical Pedon

Llanoseco silty clay loam, on a slope of less than 1 percent, under a cover of annual grasses, at an elevation of 107 feet (33 m). When described on 5/10/1995, the soil was slightly moist below a depth of 18 inches (46 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 8 inches (0 to 20 cm); pale brown (10YR 6/3) silty clay loam, dark grayish brown (10YR 4/2) moist; 33 percent clay; moderate fine subangular blocky structure; soft, friable, slightly sticky, moderately plastic; many very fine and few fine roots; common very fine tubular pores; moderately acid, pH 6.0 by pH meter 1:1 water; abrupt smooth boundary.

2A—8 to 18 inches (20 to 46 cm); grayish brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; 38 percent clay; moderate medium prismatic structure parting to moderate fine angular blocky; slightly hard, friable, moderately sticky, moderately plastic; few fine roots; common very fine tubular pores; neutral, pH 6.6 by pH meter 1:1 water; clear smooth boundary.

3Bss1—18 to 28 inches (46 to 71 cm); brown (10YR 5/3) silty clay, dark grayish brown (10YR 4/2) moist; 42 percent clay; moderate medium prismatic structure parting to moderate fine angular blocky; slightly hard, friable, moderately sticky, very plastic; very few very fine roots; common very fine tubular pores; common slickensides; slightly alkaline, pH 7.4 by pH meter 1:1 water; gradual smooth boundary.

3Bss2—28 to 41 inches (71 to 104 cm); brown (10YR 5/3) silty clay, dark grayish brown (10YR 4/2) moist; 42 percent clay; moderate medium prismatic structure parting to moderate fine angular blocky; slightly hard, friable, moderately sticky, very plastic; very few very fine roots; common very fine tubular pores; common slickensides; slightly alkaline, pH 7.7 by pH meter 1:1 water; gradual smooth boundary.

3Bss3—41 to 57 inches (104 to 145 cm); brown (10YR 5/3) silty clay, dark grayish brown (10YR 4/2) moist; 43 percent clay; moderate medium prismatic structure parting to moderate fine angular blocky; very hard, firm, moderately sticky, very plastic; very few very fine roots; few very fine tubular pores; common very fine and fine gray (10YR 5/1 moist) irregular iron depletions lining pores; common slickensides; slightly alkaline, pH 7.8 by pH meter 1:1 water; clear smooth boundary.

3Bss4—57 to 71 inches (145 to 180 cm); brown (10YR 5/3) silty clay, dark grayish brown (10YR 4/2) moist; 43 percent clay; moderate medium angular blocky structure; very hard, firm, moderately sticky, very plastic; very few very fine roots; common very fine tubular pores; common slickensides; moderately alkaline, pH 8.2 by pH meter 1:1 water; clear smooth boundary.

3Bk1—71 to 85 inches (180 to 216 cm); pale brown (10YR 6/3) silty clay, brown (10YR 4/3) moist; 43 percent clay; moderate fine angular blocky structure; hard, friable, moderately sticky, very plastic; common very fine tubular pores; 2 percent calcium carbonate; strongly alkaline, pH 8.5 by pH meter 1:1 water; clear smooth boundary.

3Bk2—85 to 91 inches (216 to 231 cm); yellowish brown (10YR 5/4) silty clay, dark yellowish brown (10YR 4/4) moist; moderate fine angular blocky structure; hard, very friable, moderately sticky, very plastic; common very fine tubular pores; strongly effervescent; 2 percent calcium carbonate; strongly alkaline, pH 8.5 by pH meter 1:1 water; abrupt wavy boundary.

4Bkqm—91 to 93 inches (231 to 236 cm); pink (7.5YR 8/4), indurated duripan, reddish yellow (7.5YR 6/6) moist; massive parting to platy; silica- and lime-cemented capping 1/8 inch thick; strongly effervescent; 49 percent calcium carbonate.

Type location: Butte County, California; about 5.5 miles southwest of Dayton, approximately 20,370 feet north and 700 feet east of the northwest corner of sec. 2, T. 19 N., R. 1 W.; in an unsectionized area in the Llano Seco Land Grant; 39 degrees, 35 minutes, 32 seconds north latitude and 121 degrees, 56 minutes, 43 seconds west longitude; NAD27; USGS Quad: Llano Seco, California.

Range in Characteristics

Depth to the duripan ranges from 60 to 120 inches (152 to 305 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from May to October 15 (about 165 days). The particle-size control section ranges from 40 to 50 percent clay. Mineralogy is smectitic. The content of organic matter is 1 to 3 percent to a depth of 28 inches (71 cm) and 0.1 to 0.5

percent from 28 to 91 inches (71 to 231 cm). By ammonium acetate, base saturation ranges from 93 to 100 percent throughout the profile. Reversible, surface-initiated cracks 1/2 to 1 inch (12.7 to 25.4 mm) wide extend to a depth of 40 to 60 inches (102 to 152 cm) from May to October (165 days) when the soils are not irrigated. Few or common slickensides occur in the 3Bss horizons, from 18 to 71 inches (46 to 180 cm). A fluctuating water table can occur between the top of the duripan and 54 inches (137 cm) below the surface of the soil from December through March. Some pedons have redoximorphic features, such as manganese or oxidized iron masses, below a depth of 40 inches (102 cm).

The Ap horizon has dry color of 10YR 6/3, 6/2, or 5/2. Moist color is 10YR 4/2 or 4/3. The content of clay ranges from 27 to 35 percent. Reaction is moderately acid or slightly acid.

The 2A horizon has dry color of 10YR 6/2, 5/2, or 5/3. Moist color is 10YR 4/2, 3/2, or 4/3. The content of clay ranges from 35 to 40 percent. Reaction is slightly acid or neutral.

The 3Bss horizon has dry color of 10YR 6/3 or 5/3. Moist color is 4/3, 4/2, or 3/3. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. Reaction ranges from neutral to strongly alkaline.

The 3Bk horizon has dry color of 10YR 5/4 or 6/3. Moist color is 10YR 4/3 or 4/4. The content of clay ranges from 40 to 50 percent. Reaction is moderately alkaline or strongly alkaline. This horizon is noneffervescent to strongly effervescent.

Loafercreek Series

The Loafercreek series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from metavolcanic rocks, mainly greenschist. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada foothills. Slopes range from 1 to 90 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Loafercreek gravelly loam, on a northwest-facing slope of 18 percent, under a cover of interior live oak, blue oak, foothill pine, whiteleaf manzanita, toyon, buckbrush, Pacific poison oak, honeysuckle, squirreltail, hedgehog dogtail, and rattlesnake brome, at an elevation of 1,197 feet (365 m). When described on 8/4/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); leaves, needles, and duff.

A—0.5 inch to 2 inches (1 to 5 cm); reddish brown (5YR 5/4) gravelly loam, reddish brown (5YR 4/3) moist; 17 percent clay; moderate fine subangular blocky structure parting to moderate fine granular; hard, friable, nonsticky, slightly plastic; common very fine roots; many very fine irregular pores; 20 percent subangular metavolcanic gravel; moderately acid, pH 6.1 by Hellige-Truog; abrupt wavy boundary.

BAt—2 to 6 inches (5 to 15 cm); reddish brown (5YR 5/4) gravelly loam, reddish brown (5YR 4/3) moist; 17 percent clay; moderate medium subangular blocky structure; hard, friable, nonsticky, slightly plastic; few fine and common very fine roots; common very fine tubular pores; 20 percent discontinuous faint clay films on faces of peds; 25 percent subangular metavolcanic gravel; slightly acid, pH 6.2 by Hellige-Truog; clear smooth boundary.

Bt1—6 to 12 inches (15 to 30 cm); yellowish red (5YR 5/6) loam, dark reddish brown (5YR 3/4) moist; 20 percent clay; moderate medium subangular blocky structure;

hard, friable, nonsticky, slightly plastic; common fine and few medium and coarse roots; common very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds and on surfaces along pores; 10 percent subangular metavolcanic gravel; slightly acid, pH 6.2 by Hellige-Truog; clear wavy boundary.

Bt2—12 to 23 inches (30 to 58 cm); yellowish red (5YR 5/6) gravelly loam, yellowish red (5YR 4/6) moist; 24 percent clay; moderate fine subangular blocky structure; hard, friable, slightly sticky, moderately plastic; few fine to coarse roots; many very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds and on surfaces along pores; 5 percent subangular metavolcanic cobbles and 20 percent subangular metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog; gradual wavy boundary.

Bt3—23 to 31 inches (58 to 79 cm); yellowish red (5YR 5/6) gravelly silt loam, yellowish red (5YR 4/6) moist; 22 percent clay; moderate fine subangular blocky structure; hard, firm, slightly sticky, moderately plastic; common fine and few medium and coarse roots; common very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds and on surfaces along pores; 20 percent subangular metavolcanic gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt wavy boundary.

Crt—31 to 42 inches (79 to 107 cm); weathered, moderately cemented greenschist; few fine roots; 60 percent continuous prominent clay films on rock fragments; abrupt wavy boundary.

R—42 inches (107 cm); indurated greenschist.

Type location: Butte County, California; about 4.5 miles northeast of Wyandotte, approximately 2,450 feet south and 1,400 feet east of the northwest corner of sec. 8, T. 19 N., R. 5 E.; 39 degrees, 31 minutes, 8.28 seconds north latitude and 121 degrees, 26 minutes, 28.49 seconds west longitude; NAD83; USGS Quad: Oroville Dam, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 150 days). The particle-size control section averages 24 to 33 percent clay and 5 to 33 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 25 percent gravel, 0 to 10 percent cobbles, and 0 to 10 percent stones. The content of silt is 40 to 50 percent in the surface layer and subsoil.

The A horizon has dry color of 7.5YR 4/6, 5/4, or 5/6 or 5YR 4/4, 4/6, or 5/4. Moist color is 7.5YR 3/4 or 4/4 or 5YR 3/4 or 4/3. Texture is loam or gravelly loam with a high content of silt, or it is silt loam. The content of clay ranges from 14 to 22 percent. The content of gravel is 3 to 20 percent. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 5 to 10 percent. Reaction ranges from strongly acid to neutral.

The BAt horizon has dry color of 7.5YR 4/6 or 5/6 or 5YR 4/6, 5/4, 5/6, or 5/8. Moist color is 7.5YR 3/4 or 4/4; 5YR 4/3, 4/4, or 4/6; or 2.5YR 4/4. Texture is loam or gravelly loam with a high content of silt, or it is silt loam. The content of clay ranges from 15 to 24 percent. The horizon has 3 to 30 percent gravel and 0 to 5 percent cobbles. By sum of cations, base saturation ranges from 65 to 73 percent. The content of organic matter is 1 to 4 percent. Reaction ranges from strongly acid to neutral.

The upper part of the Bt horizon has dry color of 7.5YR 5/6, 5YR 4/6 or 5/6, or 2.5YR 4/6. Moist color is 5YR 3/4, 4/4, or 4/6 or 2.5YR 3/6. Texture is loam, gravelly loam, clay loam, or gravelly clay loam with a high content of silt. The content of clay ranges from 18 to 30 percent. The content of gravel is 5 to 25 percent, and the content of cobbles is 0 to 5 percent. By sum of cations, base saturation ranges from

65 to 73 percent. The content of organic matter is 0.5 to 2.0 percent. Reaction ranges from moderately acid to neutral.

The lower part of the Bt horizon has dry color of 7.5YR 4/6 or 5/6 or 5YR 4/6 or 5/6. Moist color is 7.5YR 4/4 or 4/6; 5YR 4/3, 4/4, or 4/6; or 2.5YR 3/6 or 4/6. Texture is loam, gravelly loam, clay loam, or gravelly clay loam. The content of clay ranges from 18 to 30 percent. The content of gravel is 5 to 30 percent, and the content of cobbles is 0 to 10 percent. By sum of cations, base saturation ranges from 74 to 85 percent. The content of organic matter is 0.5 to 1.5 percent. Reaction ranges from moderately acid to neutral.

Loemstone Series

The Loemstone series consists of deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on terraces along the Feather River. Slopes range from 0 to 2 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Loemstone loam, on a slope of less than 1 percent, in a leveled orchard, at an elevation of 87 feet (27 m). When described on 5/9/1995, the soil was moist throughout. Water was seeping at a depth of 48 inches (122 cm). (Colors are for dry soil unless otherwise noted.)

Ap1—0 to 2 inches (0 to 5 cm); brown (10YR 5/3) loam, brown (10YR 4/3) moist; 23 percent clay; strong thin and medium platy structure; hard, firm, slightly sticky, slightly plastic; many very fine and few fine roots; few very fine and fine tubular pores; common fine strong brown (7.5YR 4/6 moist) threadlike oxidized iron masses; noneffervescent; slightly acid, pH 6.1 by pH meter 1:1 water; abrupt smooth boundary.

Ap2—2 to 4 inches (5 to 10 cm); brown (10YR 5/3) silt loam, brown (10YR 4/3) moist; 23 percent clay; strong medium and thick platy structure; hard, firm, slightly sticky, slightly plastic; many very fine and few fine roots; common very fine and fine tubular pores; common fine gray (10YR 5/1 moist) iron depletions; noneffervescent; slightly acid, pH 6.1 by pH meter 1:1 water; abrupt smooth boundary.

Ap3—4 to 10 inches (10 to 25 cm); yellowish brown (10YR 5/4) silt loam, brown (10YR 4/3) moist; 23 percent clay; moderate medium subangular blocky structure; hard, firm, slightly sticky, slightly plastic; common very fine to medium roots; common very fine and fine tubular pores; common fine gray (10YR 5/1 moist) iron depletions; noneffervescent; slightly acid, pH 6.1 by pH meter 1:1 water; clear smooth boundary.

Bt1—10 to 18 inches (25 to 46 cm); yellowish brown (10YR 5/4) clay loam, brown (7.5YR 4/3) moist; 28 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, slightly plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; few distinct discontinuous clay films on faces of peds and in pores; common fine gray (10YR 5/1 moist) iron depletions; noneffervescent; slightly acid, pH 6.1 by pH meter 1:1 water; gradual smooth boundary.

Bt2—18 to 23 inches (46 to 58 cm); yellowish brown (10YR 5/4) silty clay loam, brown (7.5YR 4/3) moist; 30 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine and fine and few medium tubular

pores; few distinct discontinuous clay films on faces of peds and in pores; noneffervescent; slightly acid, pH 6.3 by meter 1:1 water; gradual smooth boundary.

Bt3—23 to 32 inches (58 to 81 cm); yellowish brown (10YR 5/4) silt loam, brown (7.5YR 4/3) moist; 27 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; few very fine and fine, common medium, and few coarse roots; many very fine and fine and common medium tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; neutral, pH 6.6 by pH meter 1:1 water; gradual smooth boundary.

Bt4—32 to 40 inches (81 to 102 cm); yellowish brown (10YR 5/4) silt loam, brown (10YR 4/3) moist; 26 percent clay; moderate fine and medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine to medium roots; many very fine to medium tubular pores; many distinct continuous clay films on faces of peds and in pores; many fine irregular black (N 2/0) manganese masses; noneffervescent; neutral, pH 6.8 by meter 1:1 water; gradual smooth boundary.

Bt5—40 to 48 inches (102 to 122 cm); light yellowish brown (10YR 6/4) silt loam, brown (10YR 4/3) moist; 24 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine to medium roots; many very fine to medium tubular pores; many distinct continuous clay films on faces of peds and in pores; common fine irregular gray (10YR 6/1 moist) iron depletions; noneffervescent; neutral, pH 6.9 by pH meter 1:1 water; abrupt smooth boundary.

2Cd—48 to 58 inches (122 to 147 cm); pale yellow (2.5Y 7/3) silt, light olive brown (2.5Y 5/3) moist; 7 percent clay; noncemented; massive; hard, very firm, nonsticky, slightly plastic; common very fine and fine tubular pores; common fine strong brown (7.5YR 4/6 moist) oxidized iron masses; noneffervescent; slightly alkaline, pH 7.2 by pH meter 1:1 water.

Type location: Butte County, California; about 2 miles southeast of Gridley, approximately 475 feet east and 220 feet south of the intersection of Evans Reimer Road and Cowee Avenue; in an unsectionized area in the Boga Land Grant; 39 degrees, 20 minutes, 2 seconds north latitude and 121 degrees, 40 minutes, 0 seconds west longitude; NAD27; USGS Quad: Gridley, California.

Range in Characteristics

The depth to densic material is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from May to October (140 to 160 days). The particle-size control section averages 25 to 35 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 3 percent to a depth of 10 inches (25 cm) and 0.2 to 1 percent from 10 to 48 inches (25 to 122 cm). A fluctuating water table can occur between the top of the densic material and 20 inches (51 cm) below the surface of the soil from December through May.

The Ap horizon has dry color of 10YR 5/3, 5/4, or 6/3. Moist color is 10YR 4/3 or 4/2. The content of clay ranges from 18 to 27 percent. Texture is loam or silt loam. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 5/3, 5/4, 5/6, 6/4, or 6/6. Moist color is 10YR 4/2, 4/3, 4/4, 5/3, or 5/4 or 7.5YR 4/3. Texture is loam, silt loam, clay loam, or silty clay loam. The content of clay ranges from 20 to 40 percent and averages 25 to 35 percent. Redoximorphic features, such as iron-manganese masses with moist color of N 2/0 and oxidized iron masses with moist color of 10YR 4/6, 7.5YR 4/4, 4/6, or 5/6, or 5YR 4/6 or 5/6, occur below a depth of 30 inches (76 cm). Reaction ranges from slightly acid to slightly alkaline.

The 2Cd horizon has dry color of 2.5Y 7/4, 7/3, or 6/4 or 10YR 4/4 or 6/4. Moist color is 2.5Y 4/4, 5/3, or 5/4 or 10YR 4/4. Texture is loam, silt loam, silt, very fine sandy loam, or fine sandy loam. The content of clay ranges from 5 to 20 percent. Redoximorphic features, such as iron-manganese masses with moist color of N 2/0 and oxidized iron masses with moist color of 10YR 4/6, 7.5YR 4/4, 4/6, or 5/6, or 5YR 4/6 or 5/6, occur in pores and on the faces of fragments. Rupture resistance ranges from slightly hard to very hard and varies within the horizon at any given point. The horizon is noncemented. The densic material generally has many very fine and fine tubular pores that appear to be remnant root channels. Reaction ranges from slightly acid to moderately alkaline.

Lofgren Series

The Lofgren series consists of deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in flood basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 19 inches (483 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Very-fine, smectitic, thermic Xeric Epiaquerts

Typical Pedon

Lofgren clay, on a slope of less than 1 percent, under a cover of rice, at an elevation of 83 feet (25 m). When described 5/2/1995, the soil was moist throughout. The water table was at a depth of 43 inches (109 cm). (Colors are for dry soil unless otherwise noted).

Ap—0 to 5 inches (0 to 13 cm); dark gray (10YR 4/1) clay, very dark gray (10YR 3/1) moist; 56 percent clay; weak medium subangular blocky structure parting to strong fine granular; very hard, very firm, very sticky, very plastic; many fine roots; common fine irregular pores; many fine brown (7.5YR 4/4) oxidized iron masses; noneffervescent; strongly acid, pH 5.1 by pH meter 1:1 water; abrupt smooth boundary.

Bssg1—5 to 12 inches (13 to 31 cm); dark gray (10YR 4/1) clay, 50 percent very dark gray (10YR 3/1) and 50 percent dark gray (N 4/0) moist; 65 percent clay; weak medium angular blocky structure; extremely hard, very firm, very sticky, very plastic; few very fine and fine roots; few very fine tubular pores; common slickensides; common fine dark brown (7.5YR 3/3) oxidized iron masses and common fine gray (10YR 5/1) iron depletions; noneffervescent; neutral, pH 6.7 by pH meter 1:1 water; clear smooth boundary.

Bssg2—12 to 29 inches (31 to 74 cm); dark gray (10YR 4/1) clay, dark gray (10YR 4/1) moist; 66 percent clay; moderate coarse prismatic structure; extremely hard, extremely firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; common slickensides; common fine gray (10YR 5/1) iron depletions; noneffervescent; slightly alkaline, pH 7.5 by pH meter 1:1 water; clear smooth boundary.

Bkssg—29 to 38 inches (74 to 97 cm); grayish brown (10YR 5/2) clay, dark gray (10YR 4/1) moist; 65 percent clay; moderate fine angular blocky structure; extremely hard, firm, very sticky, very plastic; common very fine tubular pores; few slickensides; common fine carbonate threads and common fine gray (10YR 5/1) iron depletions; strongly effervescent; moderately alkaline, pH 8.1 by pH meter 1:1 water; abrupt smooth boundary.

Bkg—38 to 44 inches (97 to 112 cm); very pale brown (10YR 8/2) clay, dark gray (10YR 4/1) moist; 61 percent clay; moderate fine prismatic structure parting to weak fine angular blocky; extremely hard, firm, very sticky, very plastic; common very fine tubular pores; common fine carbonate threads and common fine gray

(10YR 5/1) iron depletions; strongly effervescent; moderately alkaline, pH 8.5 by pH meter 1:1 water; abrupt wavy boundary.

2Bkq—44 to 47 inches (112 to 119 cm); light gray (10YR 7/2) clay loam, dark grayish brown (10YR 4/2) moist; 29 percent clay; moderate medium angular blocky structure; very rigid, firm, moderately cemented, moderately sticky, moderately plastic; few very fine and fine tubular pores; common fine carbonate threads; strongly effervescent; strongly alkaline, pH 8.5 by pH meter 1:1 water; abrupt smooth boundary.

2Bkqm1—47 to 62 inches (119 to 158 cm); indurated duripan; light gray (10YR 7/2) sandy loam, brown (7.5YR 4/4) moist; 16 percent clay; massive; very rigid; nonsticky, nonplastic; few very fine and fine tubular pores; common fine carbonate threads; strongly effervescent; strongly alkaline, pH 8.7 by pH meter 1:1 water; alternating layers of cementation with lime and silica filaments; at a depth of 47 inches, indurated capping with lime and silica threads; a very thin layer of sand on top of the capping; abrupt smooth boundary.

2Bkqm2—62 to 82 inches (158 to 208 cm); strongly cemented duripan; pink (7.5YR 7/4) loam, brown (7.5YR 4/4) moist; 17 percent clay; massive; very rigid; nonsticky, slightly plastic; strongly effervescent; moderately alkaline, pH 8.4 by pH meter 1:1 water.

Type location: Butte County, California; about 4.2 miles southwest of Richvale, approximately 200 feet east and 1,000 feet north of the southwest corner of sec. 25, T. 19 N., R. 1 E.; 39 degrees, 28 minutes, 2 seconds north latitude and 121 degrees, 49 minutes, 4 seconds west longitude; NAD27; USGS Quad: West of Biggs, California.

Range in Characteristics

Depth to the duripan is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 66 degrees F (17 to 19 degrees C). The soil moisture control section is dry from July to October (120 to 125 days). The particle-size control section averages 60 to 70 percent clay. The soils are calcareous from a depth of 29 to 60 inches (74 to 152 cm). The content of calcium carbonate ranges from trace amounts to 11 percent. By ammonium acetate, base saturation ranges from 80 to 100 percent from a depth of 0 to 12 inches (0 to 31 cm) and is 100 percent from 12 to 82 inches (31 to 208 cm). Electrical conductivity is less than 1 mmho/cm throughout the profile. Reversible, surface-initiated cracks 1 to 2 inches (2.54 to 5 cm) wide extend to a depth of 30 to 35 inches (76 to 89 cm) from May 15 to October 15 (150 days) when the soils are not irrigated. Common slickensides are in the Bssg1, Bssg2, and Bsskg horizons, from 5 to 38 inches (13 to 97 cm). A fluctuating water table can occur between the top of the duripan and the surface of the soil from December through May. Redoximorphic features, such as manganese nodules, oxidized iron masses with color of 7.5YR 4/4 or N 2/0, and a reduced matrix with chroma of 1, occur in the horizons above the duripan. Some pedons do not have a 2Bkq horizon.

The Ap horizon has dry color of 10YR 3/1 or 4/1. Moist color is 10YR 2/1 or 3/1. The content of clay ranges from 60 to 70 percent. The content of organic matter is 1 to 3 percent. Reaction ranges from slightly acid to strongly acid because of applications of fertilizer. The content of exchangeable sodium is 1 to 2 percent.

The Bssg horizon has dry color of 10YR 3/1, 4/1, or 5/1. Moist color is 10YR 3/1 or 4/1 or N 4/0. The content of clay ranges from 60 to 70 percent. The content of organic matter is 0.5 to 1 percent. Reaction ranges from slightly alkaline to moderately alkaline. The content of exchangeable sodium is 1 to 2 percent.

The Bkssg horizon has dry color of 10YR 3/1, 4/1, or 5/2. Moist color is 10YR 3/1, 3/2, 4/1, or 4/2. The content of clay ranges from 60 to 70 percent. The content of organic matter is 0.5 to 1 percent. Reaction ranges from slightly alkaline to moderately alkaline. The content of exchangeable sodium is 2 to 3 percent.

The Bkg horizon has dry color of 10YR 5/1, 5/2, 6/2, 7/2, or 8/2. Moist color is 10YR 4/1 or 4/2. Texture is clay or silty clay. The content of clay ranges from 50 to 60 percent. The content of organic matter is 0.1 to 1 percent. Reaction is moderately alkaline or strongly alkaline. The content of exchangeable sodium is 2 to 3 percent.

2Bkq horizon has dry color of 10YR 5/2, 6/2, 7/2, or 8/2. Moist color is 10YR 4/2 or 5/2. Texture is clay loam or silty clay loam. The content of clay ranges from 27 to 40 percent. The content of organic matter is 0.1 to 1 percent. Reaction is moderately alkaline or strongly alkaline. The content of exchangeable sodium is 2 to 3 percent.

The 2Bkqm horizon has dry color of 10YR 5/2, 6/2, 7/2, or 7/3 or 7.5YR 7/4. Moist color is 10YR 4/2, 4/3, or 5/2 or 7.5YR 4/4. Rupture resistance ranges from indurated to strongly cemented. The horizon has alternating layers that are moderately cemented and weakly cemented with silica and calcium carbonate. The content of calcium carbonate ranges from 2 to 11 percent. The content of exchangeable sodium is 3 to 4 percent.

Logtrain Series

The Logtrain series consists of deep, well drained soils that formed in colluvium and residuum derived from metavolcanic and metasedimentary rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 110 percent. The mean annual precipitation is about 72 inches (1,829 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, mesic Typic Haploxerults

Typical Pedon

Logtrain gravelly loam, on a southwest-facing slope of 80 percent, under a cover of incense cedar, Douglas-fir, ponderosa pine, canyon live oak, tanoak, and bigleaf maple, at an elevation of 2,720 feet (829 m). When described on 7/27/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 3 inches (3 to 8 cm); pale yellow (2.5Y 7/3) gravelly loam, light olive brown (2.5Y 5/3) moist; 20 percent clay; weak fine and medium subangular blocky structure parting to moderate fine and medium granular; moderately hard, very friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine to medium irregular and tubular pores; 30 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

Bt1—3 to 9 inches (8 to 23 cm); pale yellow (2.5Y 7/3) very gravelly loam, light olive brown (2.5Y 5/3) moist; 22 percent clay; moderate fine and medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; common very fine to coarse roots; many very fine to medium tubular pores; 60 percent continuous faint clay films; 10 percent cobbles and 25 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; gradual smooth boundary.

Bt2—9 to 21 inches (23 to 53 cm); pale yellow (2.5Y 7/4) very gravelly loam, light olive brown (2.5Y 5/4) moist; 25 percent clay; moderate fine and medium subangular blocky structure; very hard, very friable, slightly sticky, slightly plastic; common very fine to medium and few coarse roots; many very fine to medium tubular pores; 80 percent continuous faint clay films; 5 percent cobbles and 30 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; gradual smooth boundary.

Bt3—21 to 38 inches (53 to 97 cm); very pale brown (10YR 7/4) very cobbly loam, yellowish brown (10YR 5/4) moist; 26 percent clay; moderate fine and medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; many very fine to medium and few coarse roots; many very fine to

medium tubular pores; 80 percent continuous faint clay films; 15 percent gravel and 25 percent cobbles; very strongly acid, pH 5.0 by Hellige-Truog; gradual smooth boundary.

Bt4—38 to 54 inches (97 to 137 cm); very pale brown (10YR 7/3) extremely gravelly loam, light yellowish brown (10YR 6/4) moist; 23 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium tubular pores; 60 percent continuous faint clay films; 20 percent stones, 20 percent cobbles, and 30 percent gravel; very strongly acid, pH 5.0 by Hellige-Truog; gradual smooth boundary.

R—54 inches (137 cm); strongly cemented metavolcanic bedrock; very strongly acid, pH 5.0 by Hellige-Truog.

Type location: Butte County, California; about 0.87 mile northeast of Robley Point, approximately 125 feet south and 1,950 feet west of the northeast corner of sec. 10, T. 23 N., R. 4 E.; 39 degrees, 52 minutes, 21 seconds north latitude and 121 degrees, 30 minutes, 27 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 47 to 57 degrees F (8 to 14 degrees C). The particle-size control section averages 15 to 27 percent clay and 35 to 85 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 50 percent gravel, 0 to 30 percent cobbles, 0 to 20 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 7.5YR 6/3 or 6/4; 10YR 6/2, 6/3, 6/4, or 7/4; or 2.5Y 6/3 or 7/3. Moist color is 7.5YR 3/2, 4/2, or 4/3; 10YR 3/2, 4/2, or 4/3; or 2.5Y 4/3 or 5/3. Texture is gravelly loam, very gravelly loam, gravelly sandy loam, very gravelly sandy loam, or extremely gravelly sandy loam. The content of clay ranges from 10 to 22 percent. The horizon has 25 to 65 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. Reaction ranges from slightly acid to very strongly acid.

The Bt horizon has dry color of 7.5YR 6/3, 6/4, 6/6, 7/3, or 7/4; 10YR 5/4, 6/4, 6/6, 7/3, 7/4, 8/2, or 8/3; or 2.5Y 7/3 or 7/4. Moist color is 7.5YR 3/3, 4/2, 4/3, 4/4, 4/6, or 5/4; 10YR 4/4, 4/6, 5/3, 5/4, 6/4, or 6/6; or 2.5Y 5/3, 5/4, or 6/4. Texture is very gravelly loam, extremely gravelly loam, very cobbly loam, gravelly sandy loam, very gravelly sandy loam, extremely gravelly sandy loam, very cobbly sandy loam, extremely cobbly sandy loam, very stony sandy loam, or gravelly sandy clay loam. The content of clay ranges from 12 to 27 percent. The horizon has 15 to 80 percent gravel, 0 to 40 percent cobbles, and 0 to 40 percent stones. Reaction ranges from slightly acid to extremely acid.

Lomarica Series

The Lomarica series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from metavolcanic rocks, mainly greenschist. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada foothills. Slopes range from 4 to 30 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Clayey-skeletal, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Lomarica loam, on a east-facing slope of 25 percent, under a cover of annual grasses, forbs, and a trace of blue oak, at an elevation of 350 feet (107 m). When

described on 7/13/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 3 cm); brown (7.5YR 5/3) loam, dark brown (7.5YR 3/3) moist; 15 percent clay; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky, slightly plastic; many very fine roots; common fine and few very fine tubular pores; 3 percent subangular metavolcanic gravel; slightly acid, pH 6.6 by Hellige-Truog; clear smooth boundary.

BAt—1 to 5 inches (3 to 13 cm); brown (7.5YR 5/4) loam, dark brown (7.5YR 3/4) moist; 20 percent clay; strong fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and many very fine roots; many very fine tubular pores; 10 percent discontinuous faint clay films; 3 percent subangular metavolcanic gravel; slightly acid, pH 6.6 by Hellige-Truog; clear wavy boundary.

Bt1—5 to 9 inches (13 to 23 cm); brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; 29 percent clay; strong fine and medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; common fine, few medium, and many very fine roots; common fine and many very fine tubular pores; 15 percent discontinuous faint clay films; 5 percent subangular metavolcanic gravel; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.

Bt2—9 to 12 inches (23 to 30 cm); brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; 32 percent clay; moderate very fine and fine subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common fine and many very fine roots; few medium and many very fine tubular pores; 20 percent discontinuous distinct clay films; 10 percent subangular metavolcanic gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual irregular boundary.

2Bt3—12 to 25 inches (30 to 64 cm); strong brown (7.5YR 5/6) extremely gravelly clay loam, strong brown (7.5YR 4/6) moist; 39 percent clay; moderate very fine and fine subangular blocky structure; hard, friable, moderately sticky, moderately plastic; few coarse and many very fine roots; few medium and common very fine tubular pores; 35 percent discontinuous distinct clay films; 65 percent subangular metavolcanic gravel; slightly acid, pH 6.6 by Hellige-Truog; clear wavy boundary.

2Btss—25 to 32 inches (64 to 81 cm); yellowish brown (10YR 5/4) extremely gravelly clay, dark yellowish brown (10YR 4/4) moist; 52 percent clay; strong medium and coarse subangular blocky structure; very hard, very firm, very sticky, very plastic; common fine, few coarse, and many very fine roots; common very fine tubular pores; 15 percent slickensides; 45 percent continuous distinct clay films; 80 percent subangular metavolcanic gravel; neutral, pH 6.7 by Hellige-Truog; clear wavy boundary.

2Cr—32 inches (81 cm); greenschist; few very fine roots in cracks; many very fine and few fine tubular pores.

Type location: Butte County, California; about 6.5 miles northwest of Loma Rica, approximately 450 feet north and 2,400 feet east of the southwest corner of sec. 8, T. 17 N., R. 5 E.; 39 degrees, 20 minutes, 20.10 seconds north latitude and 121 degrees, 26 minutes, 11.70 seconds west longitude; NAD83; USGS Quad: Loma Rica, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 150 days). The particle-size control section averages 35 to 45 percent clay and 40 to 65 percent rock fragments, mostly gravel. Mineralogy is mixed. Slickensides range from 45 to 55

percent in the 2Btss horizon. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 2 percent cobbles. Some pedons have a BCt horizon.

The A horizon has dry color of 7.5YR 4/4, 4/6, or 5/3 or 5YR 4/4. Moist color is 7.5YR 3/3 or 3/4 or 5YR 3/4. Texture is loam. The content of clay ranges from 15 to 20 percent. The horizon has 3 to 10 percent gravel and 0 to 5 percent cobbles. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 5 to 10 percent. Reaction ranges from moderately acid to neutral.

The BAt horizon has dry color of 7.5YR 5/4 or 5YR 4/6 or 5/6. Moist color is 7.5YR 3/4 or 5YR 4/4 or 4/6. Texture is loam or gravelly loam. The content of clay ranges from 18 to 23 percent. The horizon has 3 to 20 percent gravel and 0 to 5 percent cobbles. By sum of cations, base saturation ranges from 65 to 74 percent. The content of organic matter is 1 to 4 percent. Reaction is slightly acid or neutral.

The Bt1 horizon has dry color of 7.5YR 5/4 or 5YR 4/6 or 5/6. Moist color is 7.5YR 4/4 or 5YR 3/4 or 4/4. Texture is clay loam, gravelly clay loam, very gravelly clay loam, or extremely gravelly clay loam. The content of clay ranges from 29 to 38 percent. The horizon has 5 to 60 percent gravel and 0 to 15 percent cobbles. By sum of cations, base saturation ranges from 65 to 75 percent. The content of organic matter is 0.5 to 2 percent. Reaction is slightly acid.

The Bt2 horizon has dry color of 7.5YR 5/4 or 5YR 4/6 or 5/6. Moist color is 7.5YR 4/4 or 5YR 3/4, 4/4, or 4/6. Texture is clay loam, gravelly clay loam, very gravelly clay, or extremely gravelly clay. The content of clay ranges from 32 to 44 percent. The horizon has 10 to 65 percent gravel and 0 to 15 percent cobbles. By sum of cations, base saturation ranges from 65 to 75 percent. The content of organic matter is 0.5 to 2 percent. Reaction is moderately acid or slightly acid.

The 2Bt3 horizon has dry color of 7.5YR 5/6 or 5YR 4/6. Moist color is 7.5YR 4/6 or 5YR 3/4. Texture is extremely gravelly clay loam or extremely gravelly clay. The content of clay ranges from 35 to 45 percent. The horizon has 60 to 65 percent gravel and 0 to 15 percent cobbles. By sum of cations, base saturation ranges from 65 to 75 percent. The content of organic matter is 0.5 to 2 percent. Reaction is slightly acid or neutral.

The 2Btss horizon has dry color of 5YR 4/6 or 10YR 6/4. Moist color is 5YR 4/4 or 10YR 5/4. Texture is clay or extremely gravelly clay. The content of clay ranges from 45 to 55 percent. The horizon has 5 to 80 percent gravel and 0 to 15 percent cobbles. By sum of cations, base saturation ranges from 75 to 85 percent. The content of organic matter is 0.5 to 1 percent. Reaction is neutral.

Lucksev Series

The Lucksev series consists of shallow or very shallow, moderately well drained soils that formed in residuum, colluvium, and alluvium derived from volcanic rocks. These soils are on ridgetops, side slopes, and strath terraces on Cascade foothills. Slopes range from 2 to 35 percent. The mean annual precipitation is about 27 inches (686 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Clayey, mixed, superactive, thermic, shallow Typic Haploxeralfs

Typical Pedon

Lucksev loam, on a west-facing slope of 35 percent, under a cover of annual grasses and forbs, at an elevation of 300 feet (91 m). When described on 5/10/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); light yellowish brown (10YR 6/4) loam, brown (10YR 4/3) moist; 25 percent clay; moderate thin and medium platy structure parting to moderate fine and medium subangular blocky; very hard, friable, slightly sticky,

slightly plastic; common fine and many very fine roots; common very fine and fine and few medium irregular and tubular pores; 5 percent andesite gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt1—2 to 7 inches (5 to 18 cm); brown (7.5YR 5/3) clay loam, brown (7.5YR 4/3) moist; 34 percent clay; strong medium and coarse angular blocky structure; extremely hard, firm, moderately sticky, moderately plastic; common very fine roots; common very fine and fine irregular and tubular pores; 70 percent continuous faint clay films; 2 percent quartz gravel and 10 percent andesite gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

Bt2—7 to 15 inches (18 to 38 cm); light brown (7.5YR 6/4) clay, brown (7.5YR 4/3) moist; 40 percent clay; strong fine and medium subangular blocky structure; extremely hard, firm, very sticky, very plastic; common very fine roots; many very fine and fine and common medium tubular pores; 90 percent continuous distinct clay films; 5 percent andesite gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

2Crq—15 inches (38 cm); moderately cemented volcanic sandstone bedrock with a silica cap, 1 mm thick, on top.

Type location: Butte County, California; about 1.25 miles south of Durham-Pentz Road and about 0.5 mile west of Clark Road, approximately 100 feet south and 2,000 feet east of the northwest corner of sec. 4, T. 20 N., R. 3 E.; 39 degrees, 37 minutes, 30 seconds north latitude and 121 degrees, 38 minutes, 42 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

The depth to paralithic bedrock is 4 to 20 inches (10 to 51 cm). The mean annual soil temperature is 60 to 68 degrees F (16 to 20 degrees C). The particle-size control section averages 35 to 45 percent clay and 2 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. On the gentler slopes, a fluctuating water table can occur between the top of the bedrock and a depth of 2 inches (5 cm) from December through March. Redoximorphic features, such as oxidized iron masses and iron-manganese concretions, occur in the A horizon, and manganese accumulations occur on top of the paralithic contact. Rock fragments on the surface range from 0 to 15 percent gravel, 0 to 20 percent cobbles, 0 to 5 percent stones, and 0 to 2 percent boulders.

The A horizon has dry color of 10YR 6/2, 6/3, or 6/4 or 7.5YR 5/3, 6/3, or 7/3. Moist color is 10YR 4/2 or 4/3 or 7.5YR 4/2 or 4/3. Texture is loam, gravelly loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 22 to 35 percent. The horizon has 2 to 35 percent gravel and 0 to 15 percent cobbles. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 5/3, 6/3, 6/4, or 7/4 or 10YR 6/3 or 7/3. Moist color is 7.5YR 4/2, 4/3, or 4/4 or 10YR 4/3 or 5/3. Texture is clay loam, sandy clay loam, sandy clay, clay, gravelly clay loam, gravelly clay, gravelly sandy clay, or cobbly clay. The content of clay ranges from 30 to 50 percent. The horizon has 2 to 30 percent gravel and 0 to 15 percent cobbles. Reaction is neutral or slightly alkaline.

Lumpkin Series

The Lumpkin series consists of shallow, well drained soils that formed in mixed tephra and residuum and colluvium derived from basalt. These soils are on the tops and side slopes of basalt ridges on volcanic Sierra Nevada mountains. Slopes range from 0 to 70 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Medial-skeletal, amorphic, mesic Lithic Haploxerands

Typical Pedon

Lumpkin gravelly medial sandy loam, on a southwest-facing slope of 2 percent, under a cover of greenleaf manzanita, at an elevation of 4,235 feet (1,318 m). When described on 6/19/1995, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); dark brown (10YR 3/3) gravelly medial sandy loam, very dark grayish brown (10YR 3/2) moist; 12 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common very fine and fine roots; many very fine irregular pores; 20 percent subangular basalt gravel; strongly acid, pH 5.3 by Hellige-Truog; NaF pH 10.6; abrupt smooth boundary.

Bw1—3 to 8 inches (8 to 20 cm); brown (10YR 4/3) extremely gravelly medial fine sandy loam, very dark grayish brown (10YR 3/2) moist; 15 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common very fine and fine and few medium roots; many very fine irregular pores; 25 percent subangular basalt cobbles and 40 percent subangular basalt gravel; strongly acid, pH 5.3 by Hellige-Truog; NaF pH 10.9; clear smooth boundary.

Bw2—8 to 14 inches (20 to 36 cm); brown (10YR 4/3) extremely cobbly medial sandy loam, very dark grayish brown (10YR 3/2) moist; 14 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common very fine and fine roots; many very fine irregular pores; 5 percent subangular basalt gravel and 80 percent subangular basalt cobbles; strongly acid, pH 5.3 by Hellige-Truog; NaF pH 10.6; abrupt smooth boundary.

R—14 inches (36 cm); fractured, indurated basalt bedrock.

Type location: Butte County, California; about 1.25 miles east of Camp Eighteen, approximately 1,950 feet east and 400 feet north of the southwest corner of sec. 36, T. 21 N., R. 7 E.; 39 degrees, 37 minutes, 47 seconds north latitude and 121 degrees, 8 minutes, 52 seconds west longitude; NAD27; USGS Quad: Cascade, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The particle-size control section averages 12 to 18 percent clay and 35 to 65 percent rock fragments, mostly gravel and cobbles. Mineralogy is amorphic. The content of organic matter is 5 to 15 percent to a depth of 14 inches (36 cm). By ammonium acetate, base saturation ranges from 9 to 23 percent to a depth of 14 inches (36 cm). NaF pH is 10.5 to 12.0 throughout the profile. Rock fragments on the surface range from 10 to 80 percent gravel, 5 to 20 percent cobbles, and 0 to 5 percent stones.

The A horizon has dry color of 10YR 3/2, 3/3, 4/3, or 5/3. Moist color is 10YR 2/1 or 3/2 or 7.5YR 3/2. Texture is gravelly medial sandy loam, very gravelly medial fine sandy loam, or extremely gravelly medial fine sandy loam. The content of clay ranges from 8 to 12 percent. The content of gravel is 20 to 65 percent. Reaction ranges from slightly acid to strongly acid.

The Bw horizon has dry color of 10YR 4/3 or 5/3 or 7.5YR 3/2. Moist color is 10YR 3/1 or 3/2, 7.5YR 3/2, or 5YR 2/1. Texture is extremely gravelly medial fine sandy loam, extremely cobbly medial fine sandy loam, extremely cobbly medial sandy loam, or very gravelly medial sandy loam. The content of clay ranges from 9 to 18 percent. The horizon has 5 to 60 percent gravel and 5 to 80 percent cobbles. Reaction ranges from slightly acid to strongly acid.

Lumpkin Taxadjunct

The Lumpkin taxadjunct consists of very shallow, well drained soils that formed in mixed tephra and residuum and colluvium derived from volcanic rocks. These soils are on the tops and side slopes of volcanic nunataks and ridges on Southern Cascade and volcanic Sierra Nevada mountains. Slopes range from 0 to 30 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Medial-skeletal, amorphic, frigid Lithic Haploxerands

Typical Pedon

Lumpkin taxadjunct, on a southeast-facing slope of 2 percent, under a cover of shrubs, at an elevation of 5,680 feet (1,731 m). When described on 10/2/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 4 inches (0 to 10 cm); grayish brown (10YR 5/2) very gravelly medial very fine sandy loam, dark brown (7.5YR 3/2) moist; 13 percent clay; moderate medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; few very fine roots; many very fine irregular pores; 55 percent subangular basalt gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 11.5; abrupt smooth boundary.

Bw—4 to 9 inches (10 to 23 cm); yellowish brown (10YR 5/4) very gravelly medial very fine sandy loam, brown (7.5YR 4/3) moist; 15 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; few medium and common very fine roots; many very fine irregular pores; 50 percent subangular basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 10.5; abrupt smooth boundary.

R—9 inches (23 cm); indurated basalt bedrock.

Type location: Plumas County, California; about 2.3 miles southwest of Dogwood Peak, approximately 1,200 feet west and 200 feet north of the southeast corner of sec. 16, T. 22 N., R. 8 E.; 39 degrees, 45 minutes, 37 seconds north latitude and 121 degrees, 5 minutes, 11 seconds west longitude; NAD83; USGS Quad: Dogwood Peak, California.

Range in Characteristics

The depth to lithic bedrock is 5 to 10 inches (13 to 51 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The particle-size control section averages 14 to 18 percent clay and 40 to 55 percent rock fragments, mostly basalt gravel. Mineralogy is amorphic. The content of organic matter is 5 to 12 percent to a depth of 9 inches (23 cm). By ammonium acetate, base saturation ranges from 10 to 35 percent to a depth of 9 inches (23 cm). NaF pH is 10 to 11.5 throughout the profile. Acid-oxalate extractable Al plus ½ Fe ranges from 2.9 to 3.5 percent (by weight) to a depth of 9 inches (23 cm). Rock fragments on the surface range from 50 to 70 percent gravel, 15 to 30 percent cobbles, and 0 to 20 percent boulders.

The A horizon has dry color of 10YR 5/2 or 5/3. Moist color is 7.5YR 3/2 or 3/3. Texture is very gravelly medial very fine sandy loam. The content of clay ranges from 10 to 15 percent. The horizon has 35 to 60 percent gravel and 0 to 10 percent cobbles. Reaction ranges from very strongly acid to slightly acid.

The Bw horizon has dry color of 10YR 5/4 or 6/4. Moist color is 7.5YR 4/3 or 4/4. Texture is very gravelly medial very fine sandy loam. The content of clay ranges from 14 to 18 percent. The horizon has 45 to 60 percent gravel and 0 to 10 percent cobbles. Reaction is moderately acid or slightly acid.

The Lumpkin taxadjunct is a taxadjunct because it has a frigid soil temperature regime and is very shallow. These differences do not significantly affect the use, management, or interpretations of the soils.

Lydon Series

The Lydon series consists of moderately deep, somewhat excessively drained soils that formed in weathered tephra over residuum and colluvium derived from volcanic rocks, dominantly mudflow breccia. These soils are on the tops and side slopes of volcanic ridges in the Cascade Mountains. Slopes range from 2 to 100 percent. The mean annual precipitation is about 62 inches (1,575 mm), and the mean annual air temperature is about 54 degrees F (12 degrees C).

Taxonomic class: Loamy-skeletal, isotic, mesic Andic Dystroxerepts

Typical Pedon

Lydon very gravelly medial coarse sandy loam on an east-facing slope of 5 percent, under a cover of California black oak and scattered mixed conifers, at an elevation of 3,630 feet (1,106 m). When described on 11/27/1995, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); oak and pine litter.

Oe—0.5 to 1 inch (1 to 2 cm); partially decomposed oak and pine litter.

A—1 to 3 inches (2 to 7 cm); dark grayish brown (10YR 4/2) very gravelly medial coarse sandy loam, dark brown (7.5YR 3/2) moist; 11 percent clay; moderate fine subangular blocky structure parting to moderate fine granular; soft, very friable, nonsticky, slightly plastic; common very fine and fine roots; many very fine and fine and common medium and coarse irregular pores; noneffervescent; 2 percent cobbles and 40 percent gravel; moderately acid, pH 5.7 by pH meter 1:1 water; NaF pH 10.7; clear smooth boundary.

Bw1—3 to 6 inches (7 to 15 cm); brown (10YR 5/3) very gravelly medial coarse sandy loam, dark brown (7.5YR 3/3) moist; 10 percent clay; weak medium subangular blocky structure; soft, very friable, nonsticky, slightly plastic; common very fine and fine and few medium roots; many very fine and fine irregular pores, common very fine and fine tubular pores, and common medium irregular pores; noneffervescent; 10 percent cobbles and 35 percent gravel; moderately acid, pH 5.8 by pH meter 1:1 water; NaF pH 10.8; clear smooth boundary.

Bw2—6 to 13 inches (15 to 33 cm); brown (7.5YR 5/3) extremely gravelly sandy loam, dark brown (7.5YR 3/4) moist; 11 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, slightly plastic; many very fine to coarse roots; many very fine and fine and common medium irregular and tubular pores; noneffervescent; 15 percent cobbles and 50 percent gravel; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.

Bw3—13 to 21 inches (33 to 53 cm); light brown (7.5YR 6/4) extremely gravelly sandy loam, brown (7.5YR 4/4) moist; 15 percent clay; moderate fine granular structure; loose, nonsticky, slightly plastic; many very fine to medium and few coarse roots; many very fine and fine and common medium irregular and tubular pores; noneffervescent; 25 percent cobbles and 65 percent gravel; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.2; clear smooth boundary.

Bw4—21 to 35 inches (53 to 88 cm); light yellowish brown (10YR 6/4) extremely cobbly fine sandy loam, dark yellowish brown (10YR 4/4) moist; 16 percent clay; moderate fine granular structure; loose, nonsticky, slightly plastic; common very fine to medium roots; many very fine and fine and common medium irregular and tubular pores; noneffervescent; 70 percent cobbles and 20 percent gravel; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.3; clear smooth boundary.

R—35 inches (88 cm); fractured, indurated andesite; fractures occurring 8 to 20 inches (20 to 51 cm) apart.

Type location: Butte County, California; about 0.6 mile southeast of Ewalt Camp, approximately 2,100 feet east and 350 feet north of the northwest corner of sec. 2, T. 24 N., R. 3 E.; in an unsectionized area; 39 degrees, 58 minutes, 30.3 seconds north latitude and 121 degrees, 36 minutes, 30.4 seconds west longitude; NAD27; USGS Quad: Stirling City, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 52 to 59 degrees F (11 to 15 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 12 to 20 percent clay and 35 to 80 percent rock fragments, mostly gravel. Mineralogy is isotic. Acid oxalate extractable Al plus 1/2 Fe ranges from 2.94 in the A horizon to 1.34 in the Bw4 horizon. Rock fragments on the surface range from 20 to 50 percent gravel, 0 to 20 percent cobbles, and 0 to 15 percent stones.

The A horizon has dry color of 5YR 6/4, 7.5YR 5/3 or 6/3, or 10YR 4/2. Moist color is 5YR 3/2, 3/3, or 4/3 or 7.5YR 3/2, 3/4, or 4/3. Texture is very gravelly medial coarse sandy loam, very gravelly medial sandy loam, or gravelly medial sandy loam. The content of clay ranges from 10 to 18 percent. The horizon has 20 to 40 percent gravel, 0 to 20 percent cobbles, and 0 to 15 percent stones. The content of organic matter is 10 to 18 percent. By ammonium acetate, base saturation ranges from 30 to 40 percent. NaF pH is 10 to 11. Reaction ranges from moderately acid to neutral.

The upper part of the Bw horizon has dry color of 7.5YR 4/4, 5/3, 5/4, 6/4, or 6/6 or 10YR 5/3 or 6/3. Moist color is 7.5YR 3/3, 3/4, 4/3, or 4/4 or 5YR 4/3 or 4/4. Texture is very gravelly medial coarse sandy loam, gravelly medial sandy loam, very gravelly medial sandy loam, or extremely gravelly medial sandy loam. The content of clay ranges from 10 to 18 percent. The content of gravel is 10 to 50 percent, the content of cobbles is 5 to 20 percent, and the content of stones is 0 to 15 percent. The content of organic matter is 3 to 13 percent. By ammonium acetate, base saturation ranges from 25 to 35 percent. NaF pH is 9.8 to 11. Reaction ranges from strongly acid to neutral.

The lower part of the Bw horizon has dry color of 7.5YR 6/3 or 6/4 or 10YR 6/3 or 6/4. Moist color is 5YR 4/4; 7.5YR 3/4, 4/3, or 4/4; or 10YR 4/3. Texture is very gravelly sandy loam, extremely gravelly sandy loam, or extremely cobbly fine sandy loam. The content of clay ranges from 12 to 20 percent. The content of gravel is 20 to 65 percent, the content of cobbles is 15 to 70 percent, and the content of stones is 0 to 15 percent. The content of organic matter is 1 to 5 percent. By ammonium acetate, base saturation ranges from 35 to 45 percent. NaF pH is 9.5 to 10.5. Reaction ranges from strongly acid to slightly acid.

Mac Series

The Mac series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from metasedimentary and metavolcanic rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 65 inches (1,651 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Typic Haploxerults

Typical Pedon

Mac gravelly loam, on a south-southwest-facing slope of 15 percent, under a cover of ponderosa pine, white fir, sugar pine, Douglas-fir, incense cedar, and tanoak, at an elevation of 3,540 feet (1,079 m). When described on 7/15/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 4 inches (3 to 10 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/4) moist; 23 percent clay; moderate fine and medium granular structure; soft, very friable, slightly sticky, slightly plastic; many very fine and fine and few medium roots; many very fine to medium irregular and tubular pores; 15 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

Bt1—4 to 9 inches (10 to 22 cm); reddish yellow (5YR 7/6) very gravelly loam, yellowish red (5YR 5/6) moist; 27 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and medium, few coarse, and many very fine roots; many very fine to coarse irregular and tubular pores; 80 percent continuous faint clay films; 15 percent cobbles and 25 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.

Bt2—9 to 15 inches (22 to 38 cm); reddish yellow (5YR 6/6) gravelly silty clay loam, yellowish red (5YR 5/6) moist; 29 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine to coarse tubular pores; 80 percent continuous distinct clay films; 25 percent gravel; strongly acid, pH 5.4 by Hellige-Truog; gradual smooth boundary.

Bt3—15 to 23 inches (38 to 58 cm); reddish yellow (5YR 6/6) silty clay loam, yellowish red (5YR 5/6) moist; 31 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, moderately plastic; common very fine to coarse roots; many very fine and fine and common medium tubular pores; 80 percent continuous distinct clay films; 10 percent gravel; strongly acid, pH 5.3 by Hellige-Truog; clear smooth boundary.

Crt—23 to 37 inches (58 to 94 cm); pale brown (10YR 6/3) very gravelly silt loam, brown (10YR 5/3) moist; 27 percent clay; massive; soft, very friable, slightly sticky, slightly plastic; few very fine and fine and common medium roots; few very fine to medium tubular pores; 20 percent continuous distinct clay films; 60 percent gravel; very strongly acid, pH 5.0 by Hellige-Truog; clear smooth boundary.

Cr—37 inches (94 cm); weakly cemented phyllite bedrock.

Type location: Butte County, California; about 2.9 miles northeast of Sawmill Peak, approximately 2,000 feet north and 2,000 feet west of the southeast corner of sec. 22, T. 23 N., R. 4 E.; 39 degrees, 50 minutes, 8 seconds north latitude and 121 degrees, 30 minutes, 45 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 50 to 57 degrees F (10 to 14 degrees C). The particle-size control section averages 18 to 35 percent clay and 15 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 5 to 50 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones.

The A horizon has dry color of 7.5YR 5/4, 6/4, or 6/6 or 10YR 6/2, 6/3, 6/4, 7/2, 7/3, or 7/4. Moist color is 7.5YR 4/4, 5YR 4/4 or 4/6, or 10YR 3/2, 4/2, 4/3, 4/4, or 5/4. Texture is gravelly loam, very gravelly loam, or very gravelly sandy loam. The content

of clay ranges from 15 to 25 percent. The horizon has 15 to 45 percent gravel and 0 to 10 percent cobbles. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 5YR 5/6, 6/6, or 7/6; 7.5YR 5/6, 6/6, 7/6, or 7/3; or 10YR 6/4, 7/4, 7/2, 7/3, or 8/6. Moist color is 5YR 4/4, 4/6, 5/6, or 5/8; 7.5YR 4/3, 4/4, 5/4, 5/6, or 6/6; 10YR 4/2, 4/3, 5/3, or 6/6; or 2.5YR 4/6. Texture is gravelly loam, very gravelly loam, clay loam, gravelly clay loam, silt loam, silty clay loam, gravelly silty clay loam, or gravelly sandy loam. The content of clay ranges from 17 to 35 percent. The horizon has 10 to 45 percent gravel and 0 to 15 percent cobbles. Reaction ranges from strongly acid to slightly acid.

The Crt horizon has dry color of 10YR 6/3, 6/4, or 7/3 or 2.5Y 6/2. Moist color is 10YR 5/3 or 2.5Y 4/2. Texture is very gravelly silt loam, extremely gravelly loam, extremely gravelly sandy clay loam, or extremely cobbly loam. The content of clay ranges from 16 to 27 percent. The horizon has 30 to 80 percent gravel and 0 to 40 percent cobbles. Reaction ranges from very strongly acid to slightly acid.

Marcum Series

The Marcum series consists of deep or very deep, moderately well drained soils that formed in alluvium derived from mixed sources. These soils are on low terraces and basin rims. Slopes range from 0 to 2 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Typic Argixerolls

Typical Pedon

Marcum clay loam, on a slope of 1 percent, in an irrigated pear orchard, at an elevation of 37 feet (11 m). When described on 8/16/1978, the soil was dry to a depth of 6 inches (15 cm) and moist below that depth. (Colors are for dry soil unless otherwise noted.)

Ap—0 to 6 inches (0 to 15 cm); brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, friable, sticky, plastic; few fine tubular and irregular pores; neutral, pH 7.0; clear smooth boundary.

A—6 to 16 inches (15 to 41 cm); brown (10YR 4/3) clay loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; hard, friable, sticky, plastic; common very fine and few fine roots; common very fine tubular pores; slightly alkaline, pH 7.5; gradual wavy boundary.

Bt1—16 to 28 inches (41 to 71 cm); dark yellowish brown (10YR 4/4) clay loam, dark yellowish brown (10YR 3/4) moist; weak medium and coarse subangular blocky structure; very hard, firm, very sticky, very plastic; few very fine and fine roots; few very fine tubular pores; few thin clay films and pressure faces on peds; few fine manganese concretions; moderately alkaline, pH 8.0; clear wavy boundary.

Bt2—28 to 40 inches (71 to 102 cm); strong brown (7.5YR 5/6) clay, strong brown (7.5YR 4/6) moist; weak fine and medium prismatic structure; very hard, firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; many thin clay films and pressure faces on peds; few very fine and fine manganese concretions; moderately alkaline, pH 8.0; gradual wavy boundary.

Bk—40 to 43 inches (102 to 109 cm); light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; massive; hard, friable, sticky, plastic; few very fine roots; few very fine tubular pores; few thin clay films on faces of peds; few very fine manganese concretions; slightly effervescent; disseminated lime; moderately alkaline, pH 8.0; abrupt wavy boundary.

2Cr—43 to 62 inches (109 to 158 cm); very pale brown (10YR 7/4) siltstone, light yellowish brown (10YR 6/4) moist; many black (10YR 2/1) manganese stains on

fracture faces; many yellowish brown (10YR 5/8), brownish yellow (10YR 6/6 and 6/8), and strong brown (7.5YR 5/8) mottles on fracture faces and in pores; massive; very hard, very firm; many very fine and few fine and coarse tubular pores; slightly effervescent; lime in seams and in a laminar cap, 0.5 cm thick, that is discontinuous within the pedon; moderately alkaline, pH 8.0.

Type location: Sutter County, California; about 0.6 mile northwest of Tudor on Highway 99, then 150 feet west into a pear orchard, approximately 365 feet south and 120 feet west of the northeast corner of sec. 4, T. 13 N., R. 3 E.; 39 degrees, 37 minutes, 8 seconds north latitude and 121 degrees, 38 minutes, 3 seconds west longitude; NAD27; USGS Quad: Gilsizer Slough, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 80 inches (102 to 203 cm). The mean annual soil temperature is 60 to 65 degrees F (16 to 18 degrees C). The soil temperature is above 47 degrees F (8 degrees C) the entire year. The difference between the mean summer and mean winter soil temperature is 30 to 33 degrees F. In nonirrigated areas, the soil between depths of 6 and 17 inches (15 to 43 cm) is dry in all parts from June to October and is moist in some or all parts from November to May. Reaction is neutral to moderately alkaline.

The A horizon has dry color of 10YR 5/2, 5/3, or 4/3 or 7.5YR 5/2. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/2. The content of clay ranges from 27 to 35 percent.

The Bt horizon has dry color of 10YR 4/4, 5/3, 5/4, 6/3, 6/4, or 7/4 or 7.5YR 6/4 or 5/6. Moist color is 10YR 3/4, 4/3, 4/4, or 5/4 or 7.5YR 3/2, 3/3, 4/4, or 4/6. Texture is clay loam, silty clay loam, clay, or silty clay. The content of clay ranges from 30 to 60 percent.

The Bk horizon has dry color of 10YR 5/4 or 6/4. Moist color is 10YR 4/3, 4/4, or 5/4. The content of clay ranges from 30 to 40 percent.

Mariposa Taxadjunct

The Mariposa taxadjunct consists of shallow or moderately deep, well drained soils that formed in material weathered from metamorphic rocks. These soils are on metamorphic Sierra Nevada mountains. Slopes range from 2 to 75 percent. The mean annual precipitation is about 65 inches (1,651 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, parasesquic, mesic Typic Haploxerults

Typical Pedon

Mariposa gravelly loam. (Colors are for dry soil unless otherwise noted.)

Oi—2 inches to 0 (5 cm to 0); partially decomposed leaves, twigs, and needles.

A—0 to 4 inches (0 to 10 cm); brown (7.5YR 5/4) gravelly loam, reddish brown (5YR 3/4) moist; strong medium granular structure; soft, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine irregular pores; 20 percent gravel and 5 percent cobbles; neutral; clear smooth boundary.

Bt1—4 to 10 inches (10 to 25 cm); reddish brown (5YR 5/4) gravelly loam, dark reddish brown (5YR 3/4) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine to medium roots; common very fine irregular and many very fine and fine tubular pores; 20 percent gravel and 5 percent cobbles; few thin clay films lining pores; moderately acid; clear smooth boundary.

Bt2—10 to 17 inches (25 to 43 cm); yellowish red (5YR 4/6) gravelly loam, dark red (2.5YR 3/6) moist; weak medium subangular blocky structure; slightly hard, very

friable, slightly sticky, slightly plastic; many very fine to medium and common coarse roots; common very fine and fine tubular pores; common thin clay films in pores; 20 percent gravel and 5 percent cobbles; moderately acid; clear smooth boundary.

Bt3—17 to 23 inches (43 to 58 cm); yellowish red (5YR 5/6) gravelly clay loam, dark red (2.5YR 3/6) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine to coarse roots; common fine tubular pores; 20 percent gravel and 5 percent cobbles; common thin clay films on faces of peds and in pores; moderately acid; abrupt smooth boundary.

R—23 inches (58 cm); gray (10YR 6/1), indurated schist bedrock; tilted about 80 degrees from horizontal.

Type location: Yuba County, California; about 0.6 mile northeast of Challenge, approximately 600 feet south and 1,500 feet east of the northwest corner of sec. 20, T. 19 N., R. 7 E.; 39 degrees, 29 minutes, 46 seconds north latitude and 121 degrees, 12 minutes, 57 seconds west longitude; NAD27; USGS Quad: Challenge, California.

Range in Characteristics

The depth to lithic bedrock ranges from 15 to 35 inches (38 to 89 cm). It varies over very short distances. The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July 1 to October 15 (about 85 days). Mineralogy is mixed. The content of organic matter is 1 to 3 percent to a depth of 6 inches (15 cm). The content of gravel is 15 to 25 percent, the content of cobbles is 0 to 10 percent, and the content of stones is 0 to 10 percent.

The A horizon has dry color of 7.5YR 5/4, 5/6, or 4/4. Moist color is 7.5YR 3/4 or 5YR 3/4. Texture is gravelly or stony loam. The content of clay ranges from 10 to 20 percent. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 5/6 or 5YR 4/4, 4/6, 5/6, or 5/8. Moist color is 5YR 3/4, 4/6, or 3/6 or 2.5YR 3/6. Texture is gravelly loam, gravelly clay loam, stony loam, or stony clay loam. The content of clay ranges from 20 to 30 percent. The absolute clay increase from the A horizon to the Bt horizon is 3 to 4 percent in 50 to 70 percent of each pedon. It is 1 to 2 percent in the remaining 30 to 50 percent of each pedon, where bedrock ledges interrupt at a shallow depth. Reaction is moderately acid.

The Mariposa taxadjunct is a taxadjunct because it has a greater quantity of free iron oxides and carbon in the Bt horizon than is defined as the range for the series and has parasesquic mineralogy. These differences do not significantly affect the use, management, or interpretations of the soils.

McNair Series

The McNair series consists of deep, well drained soils that formed in tephra over residuum and colluvium weathered from volcanic mudflow. These soils are on lahar over narrow basalt plateaus on volcanic Sierra Nevada mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 50 degrees F (10 degrees C.)

Taxonomic class: Medial-skeletal, amorphic, frigid Humic Haploxerands

Typical Pedon

McNair medial coarse sandy loam, on a west-facing slope of 5 percent, under a cover of mixed conifers and shrubs, at an elevation of 4,960 feet (1,512 m). When described

on 7/23/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 3 inches (0 to 8 cm); partially decomposed litter of needles, leaves, cones, and twigs.

A1—3 to 6 inches (8 to 15 cm); very dark grayish brown (10YR 3/2) medial coarse sandy loam, black (10YR 2/1) moist; 5 percent clay; weak very fine granular structure; loose, very friable, nonsticky, nonplastic; common fine roots; many very fine irregular pores; extremely hydrophobic; 12 percent subrounded andesite gravel; neutral, pH 6.7 by Hellige-Truog; NaF pH 11.7; abrupt smooth boundary.

A2—6 to 16 inches (15 to 41 cm); dark grayish brown (10YR 4/2) gravelly medial coarse sandy loam, black (10YR 2/1) moist; 10 percent clay; weak very fine subangular blocky structure parting to weak fine granular; loose, very friable, nonsticky, nonplastic; common fine to coarse roots; many very fine irregular pores; moderately hydrophobic, smeary; 10 percent rounded andesite gravel and 5 percent rounded andesite stones; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 11.5; clear smooth boundary.

Bw1—16 to 25 inches (41 to 63 cm); brown (7.5YR 5/3) very gravelly medial sandy loam, brown (7.5YR 4/2) moist; 12 percent clay; weak fine subangular blocky structure parting to weak fine granular; loose, very friable, nonsticky, nonplastic; common fine and medium roots; many very fine irregular pores; smeary; 30 percent rounded andesite gravel, 5 percent rounded volcanic mudflow cobbles, and 5 percent rounded andesite stones; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 11.5; clear wavy boundary.

Bw2—25 to 33 inches (63 to 84 cm); brown (7.5YR 5/3) very gravelly medial sandy loam, brown (7.5YR 4/2) moist; 15 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common fine and medium roots; many very fine irregular pores; 35 percent rounded andesite gravel and 5 percent subrounded volcanic mudflow gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 11.3; clear wavy boundary.

Bw3—33 to 48 inches (84 to 122 cm); brown (7.5YR 5/3) very gravelly medial sandy loam, brown (7.5YR 4/3) moist; 16 percent clay; weak very fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; many fine and medium and few coarse roots; many very fine irregular pores; smeary; 30 percent rounded andesite gravel, 5 percent rounded andesite cobbles, 5 percent rounded andesite stones, and 15 percent subrounded volcanic mudflow gravel; very strongly acid, pH 4.7 by Hellige-Truog; NaF pH 10.7; abrupt smooth boundary.

BC—48 to 57 inches (122 to 145 cm); pale brown (10YR 6/3) extremely gravelly coarse sandy loam, brown (10YR 4/3) moist; 8 percent clay; weak very fine granular structure; loose, very friable, nonsticky, nonplastic; common fine and medium roots; many very fine irregular pores; 60 percent rounded andesite gravel and 20 percent subrounded volcanic mudflow gravel; very strongly acid, pH 5.0 by Hellige-Truog; NaF pH 10.5; clear smooth boundary.

Cr—57 to 88 inches (145 to 223 cm); moderately cemented volcanic mudflow; few medium roots in horizontal fractures about 8 to 12 inches apart; few pockets of highly weathered volcanic mudflow.

Type location: Plumas County, California; about 2.4 miles east of Cascade, approximately 650 feet east and 1,200 feet south of the northwest corner of sec. 7, T. 21 N., R. 8 E.; 39 degrees 41 minutes 51.4 seconds north latitude and 121 degrees 8 minutes 3.3 seconds west longitude; NAD83; USGS Quad: Cascade, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C.) The soil moisture

control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 10 to 18 percent clay and 35 to 50 percent rock fragments, mostly gravel and cobbles. Mineralogy is amorphic. By ammonium acetate, base saturation ranges from 10 to 35 percent. P retention is more than 95 percent to a depth of 33 inches (84 cm). Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders. Some pedons do not have a BC horizon.

The A horizon has dry color of 10YR 3/2, 4/2, 4/3, or 5/3. Moist color is 10YR 2/1, 2/2, or 3/2 or 7.5YR 3/2 or 3/3. Texture is dominantly medial coarse sandy loam and gravelly medial coarse sandy loam, but in some pedons it is very gravelly medial sandy loam or gravelly medial silt loam. The content of clay ranges from 5 to 12 percent. The horizon has 5 to 20 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 9 to 36 percent. Acid oxalate extractable Al plus $^1/_2$ Fe ranges from 2.9 to 3.5. NaF pH is 11.0 to 12.0. Reaction ranges from strongly acid to neutral.

The Bw horizon has dry color of 7.5YR 5/3, 6/4, or 7/4 or 10YR 4/3, 5/4, 6/3, 6/4, 7/3, 7/4, or 8/3. Moist color is 7.5YR 3/4, 4/2, 4/3, 4/4, or 5/4 or 10YR 2/2, 4/3, 4/4, 6/6, or 8/4. Texture is very gravelly medial sandy loam, extremely gravelly medial sandy loam, extremely gravelly medial coarse sandy loam, very gravelly medial loam, extremely gravelly medial loam, or extremely gravelly medial sandy clay loam. The content of clay ranges from 10 to 25 percent. The horizon has 35 to 50 percent gravel, 0 to 30 percent cobbles, and 0 to 10 percent stones. Pararock fragments consist of a weathered volcanic mudflow matrix. The content of paragravel is 5 to 15 percent, and the content of paracobbles is 0 to 5 percent. The content of organic matter is 6 to 9 percent. Acid oxalate extractable Al plus $^1/_2$ Fe ranges from 1.7 to 2.5. The content of glass ranges from 10 to 29 percent. NaF pH is 10.5 to 11.5. Reaction ranges from very strongly acid to slightly acid.

The BC horizon has dry color of 10YR 6/3 or 7/4. Moist color is 10YR 4/3 or 5/4. Texture is extremely gravelly sandy loam, extremely gravelly coarse sandy loam, extremely gravelly loam, or extremely gravelly sandy clay loam. The content of clay ranges from 8 to 25 percent. The horizon has 60 to 80 percent gravel, 0 to 10 percent cobbles, and 0 to 10 percent stones. The content of paragravel is 20 to 30 percent. The content of organic matter is 4 to 6 percent. NaF pH is 10.5 to 11.0. Reaction is very strongly acid or strongly acid.

Mildred Series

The Mildred series consists of moderately deep, well drained soils that formed in material weathered from basic intrusive igneous rocks. These soils are on plutons in the Sierra Nevada Mountains. Slopes range from 3 to 50 percent. The mean annual precipitation is about 45 inches (114 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Fine, mixed, active, mesic Ultic Haploxeralfs

Typical Pedon

Mildred cobbly loam, on a northeast-facing slope of 18 percent, under a cover of whiteleaf manzanita, scattered ponderosa pine, and foothill pine, at an elevation of 1,670 feet (509 m). When described on 8/28/1985, the soil was dry throughout. (Colors are for dry soil unless otherwise noted).

A—0 to 3 inches (0 to 8 cm); pale brown (10YR 6/3) cobbly loam, dark yellowish brown (10YR 4/4) moist; moderate medium granular structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine and few fine roots; common

very fine irregular and few very fine tubular pores; 20 percent cobbles, 10 percent gravel, and 3 percent stones; slightly acid, pH 6.2; clear wavy boundary.

Bt—3 to 9 inches (8 to 23 cm); light brown (7.5YR 6/4) cobbly clay loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, friable, sticky, plastic; common very fine and few fine roots; common very fine tubular pores; few thin clay films on faces of peds and common moderately thick clay films in pores; 20 percent cobbles, 10 percent gravel, and 3 percent stones; slightly acid, pH 6.4; abrupt smooth boundary.

2Bt1—9 to 15 inches (23 to 38 cm); reddish brown (5YR 4/4) clay, yellowish red (5YR 4/6) moist; strong medium prismatic structure parting to weak medium subangular blocky; hard, firm, very sticky, very plastic; few very fine roots; common very fine tubular pores; common pressure faces; neutral, pH 6.8; clear smooth boundary.

2Bt2—15 to 20 inches (38 to 51 cm); brown (10YR 5/3) clay, dark brown (10YR 4/3) moist; strong medium prismatic structure parting to weak medium subangular blocky; very hard, very firm, very sticky, very plastic; few very fine roots; common very fine tubular pores; common pressure faces; neutral, pH 7.0; clear smooth boundary.

2BCt—20 to 23 inches (51 to 58 cm); reddish yellow (7.5YR 6/6) clay loam, strong brown (7.5YR 5/6) moist; strong medium prismatic structure parting to weak medium subangular blocky; very hard, very firm, very sticky, very plastic; few very fine and medium roots; common very fine tubular pores; few pressure faces; common moderately thick clay films on faces of peds and many moderately thick clay films in pores; neutral, pH 7.0; abrupt wavy boundary.

2Cr—23 inches (58 cm); mixed reddish yellow (7.5YR 7/8), light gray (10YR 7/1), and white (10YR 8/1), weathered norite.

Type location: Yuba County, California; about 0.75 mile north of Oregon House on Frenchtown Road, then northwest about l mile in the Thousand Trails Campground, approximately 2,550 feet south and 1,850 feet west of the northeast corner of sec. 35, T. 18 N., R. 6 E.; 39 degrees, 22 minutes, 31 seconds north latitude and 121 degrees, 15 minutes, 54 seconds west longitude; NAD27; USGS Quad: Rackerby, California.

Range in Characteristics

The depth to paralithic bedrock ranges from 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 52 to 56 degrees F (11 to 13 degrees C). The soil temperature is below 47 degrees (8 degrees C) from January 1 to February 31. The soil moisture control section is dry in all parts from June 15 to October 31 and is moist in some or all parts from November 1 to June 15.

The A horizon has dry color of 10YR 6/3 or 7.5YR 5/6, 5/4, or 5/3. Moist color is 10YR 4/4 or 3/4 or 7.5YR 3/4. The content of clay ranges from 18 to 27 percent. The content of rock fragments ranges from 15 to 35 percent, including 0 to 5 percent stones, 5 to 25 percent cobbles, and 10 to 25 percent gravel. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 10YR 6/4 or 7.5YR 7/4, 6/4, 5/4, or 5/3. Moist color is 10YR 4/3 or 7.5YR 4/6, 4/4, 4/3, or 3/4. The content of clay ranges from 27 to 35 percent. The content of rock fragments ranges from 15 to 35 percent, including 0 to 5 percent stones, 5 to 25 percent cobbles, and 10 to 25 percent gravel. Reaction is slightly acid or neutral. Base saturation is 50 to 75 percent in some part of the horizon.

The 2Bt horizon has dry color of 10YR 5/3; 7.5YR 6/6, 6/4, 5/5, or 5/4; or 5YR 5/6, 5/4, or 4/4. Moist color is 10YR 4/3; 7.5YR 5/6, 4/4, or 3/4; or 5YR 4/6 or 4/4. The horizon has an abrupt upper boundary. Texture is clay loam or clay. The content of clay ranges from 35 to 60 percent. The absolute clay increase from the Bt horizon to the 2Bt horizon is 15 to 30 percent. The content of rock fragments ranges from 0 to

15 percent, including 0 to 15 percent cobbles and 0 to 15 percent gravel. Reaction is slightly acid or neutral. Base saturation is 75 to 95 percent.

Millerridge Series

The Millerridge series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from ultramafic rocks. These soils are on ridgetops and side slopes on ultramafic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 52 inches (1,321 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Ultic Haploxeralfs

Typical Pedon

Millerridge gravelly sandy clay loam, on a south-facing slope of 15 percent, under a cover of yellow starthistle, buckbrush, whiteleaf manzanita, and toyon, at an elevation of 2,180 feet (664 m). When described on 10/24/2000, the soil was moderately dry to a depth of 12 inches (30 cm) and dry below that depth. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); light brown (7.5YR 6/4) gravelly sandy clay loam, brown (7.5YR 4/3) moist; 23 percent clay; moderate fine and medium granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine to medium tubular and irregular pores; 5 percent stones, 5 percent cobbles, and 7 percent gravel; neutral, pH 6.7 by Hellige-Truog; clear smooth boundary.

Bt1—2 to 6 inches (5 to 15 cm); reddish yellow (7.5YR 7/6) stony sandy clay loam, strong brown (7.5YR 4/6) moist; 28 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; common very fine to medium tubular pores; 60 percent continuous faint clay films; 5 percent stones, 5 percent cobbles, and 5 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.

Bt2—6 to 12 inches (15 to 30 cm); reddish yellow (5YR 6/6) cobbly clay loam, yellowish red (5YR 4/6) moist; 32 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 90 percent continuous distinct clay films; 5 percent stones, 5 percent gravel, and 10 percent cobbles; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt3—12 to 20 inches (30 to 51 cm); reddish yellow (5YR 6/6) cobbly clay loam, yellowish red (5YR 4/6) moist; 36 percent clay; strong fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine to coarse roots; many very fine to medium tubular pores; 90 percent continuous distinct clay films; 5 percent stones, 8 percent gravel, and 10 percent cobbles; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt4—20 to 26 inches (51 to 67 cm); reddish yellow (5YR 6/6) gravelly clay, yellowish red (5YR 5/6) moist; 40 percent clay; strong fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; few very fine to coarse roots; many very fine to medium and common coarse tubular pores; 90 percent continuous distinct clay films; 5 percent stones, 5 percent cobbles, and 8 percent gravel; neutral, pH 6.7 by Hellige-Truog; abrupt smooth boundary.

Crt—26 inches (67 cm); light greenish gray (5GY 7/1), weakly cemented ultramafic bedrock, light greenish gray (5G 7/1) moist; few very fine and fine roots; 20 percent continuous distinct clay films; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 1.12 miles east of Concow School, approximately 600 feet north and 800 feet west of the southeast corner of sec. 27, T. 22 N., R. 4 E.; 39 degrees, 43 minutes, 39 seconds north latitude and 121 degrees, 30 minutes, 28 seconds west longitude; NAD83; USGS Quad: Cherokee, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 54 to 59 degrees F (12 to 15 degrees C). The particle-size control section averages 27 to 35 percent clay and 15 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed but is affected by a high content of magnesium-rich minerals in the series control section. Rock fragments on the surface range from 0 to 60 percent gravel, 0 to 30 percent cobbles, 0 to 20 percent stones, and 0 to 15 percent boulders.

The A horizon has dry color of 7.5YR 6/4, 7/3, or 7/6. Moist color is 7.5YR 4/3 or 5/4 or 5YR 4/6. Texture is gravelly sandy clay loam or gravelly loam. The content of clay ranges from 20 to 27 percent. The horizon has 7 to 25 percent gravel, 0 to 10 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders. Reaction is slightly acid or neutral.

The upper part of the Bt horizon has dry color of 7.5YR 6/6, 7/4, or 7/6 or 5YR 6/6. Moist color is 7.5YR 4/6, 5/4, or 5/6 or 5YR 4/6 or 5/6. Texture is gravelly clay loam, cobbly clay loam, stony sandy clay loam, gravelly sandy clay loam, or cobbly sandy clay loam. The content of clay ranges from 27 to 35 percent. The content of gravel is 5 to 30 percent, the content of cobbles is 0 to 20 percent, the content of stones is 0 to 5 percent, and the content of boulders is 0 to 5 percent. Reaction is slightly acid or neutral.

The lower part of the Bt horizon has dry color of 5YR 5/6, 6/6, or 7/6 or 7.5YR 7/6. Moist color is 5YR 4/6, 5/6, or 5/8 or 7.5YR 5/8. Texture is gravelly clay loam, cobbly clay loam, very cobbly clay loam, cobbly sandy clay loam, gravelly clay, or cobbly clay. The content of clay ranges from 30 to 50 percent. The content of gravel is 5 to 30 percent, the content of cobbles is 5 to 25 percent, the content of stones is 0 to 5 percent, and the content of boulders is 0 to 5 percent. Reaction is slightly acid or neutral.

Minniecreek Series

The Minniecreek series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from metavolcanic rocks, mainly greenschist. These soils are on metamorphic Sierra Nevada foothills. Slopes range from 2 to 70 percent. The mean annual precipitation is about 48 inches (1,219 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Fine-loamy, mixed, active, mesic Ultic Haploxeralfs

Typical Pedon

Minniecreek loam, on a north-facing slope of 43 percent, under a cover of whiteleaf manzanita, interior live oak, Pacific madrone, ponderosa pine, and California black oak, at an elevation of 2,160 feet (658 m). When described on 8/17/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; 20 percent clay; strong medium granular structure; slightly hard, friable, nonsticky, slightly plastic; many fine roots; many very fine

irregular pores; 10 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

BAt—2 to 8 inches (5 to 20 cm); very pale brown (10YR 7/4) loam, brown (7.5YR 5/4) moist; 22 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; common fine and few medium roots; common very fine tubular pores; 5 percent discontinuous distinct clay films on faces of peds; 5 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt1—8 to 15 inches (20 to 38 cm); pink (7.5YR 7/4) loam, strong brown (7.5YR 4/6) moist; 25 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and few medium roots; common very fine tubular pores; 15 percent discontinuous distinct clay films on faces of peds; 5 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt2—15 to 24 inches (38 to 61 cm); light reddish brown (5YR 6/4) silty clay loam, yellowish red (5YR 4/6) moist; 30 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common fine and few medium roots; common very fine tubular pores; 10 percent continuous distinct clay films on surfaces along pores and 20 percent continuous distinct clay films on faces of peds; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

BCt—24 to 32 inches (61 to 81 cm); reddish yellow (7.5YR 7/6) silty clay loam, strong brown (7.5YR 5/6) moist; 37 percent clay; moderate fine subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; few fine and medium and common coarse roots; many fine tubular pores; 20 percent continuous distinct clay films on faces of peds; strongly acid, pH 5.5 by Hellige-Truog; gradual smooth boundary.

Crt1—32 to 47 inches (81 to 119 cm); moderately cemented, weathered greenschist; common fine and few medium roots in cracks; 80 percent continuous prominent clay films; gradual smooth boundary.

Crt2—47 to 58 inches (119 to 147 cm); moderately cemented, weathered greenschist; common fine and few medium roots in cracks; 80 percent continuous prominent clay films; gradual wavy boundary.

Cr—58 to 75 inches (147 to 190 cm); moderately cemented greenschist bedrock; bedding plane tilted to 30 degrees; common medium roots around rocks.

Type location: Butte County, California; about 1.6 miles southeast of Bloomer Hill Lookout, approximately 1,500 feet west and 1,500 feet north of the southeast corner of sec. 31, T. 21 N., R. 5 E.; 39 degrees, 37 minutes, 47.91 seconds north latitude and 121 degrees, 27 minutes, 20.51 seconds west longitude; NAD83; USGS Quad: Berry Creek, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches. The mean annual soil temperature is 53 to 59 degrees F (12 to 14 degrees C). The soil moisture control section is dry in all parts from about June to October (about 120 days). The particle-size control section averages 25 to 30 percent clay with a silt content of as much as 50 percent, and it averages 2 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 4 percent to a depth of 15 inches (38 cm) and is less than 1 percent below that depth. By sum of cations, base saturation ranges from 39 to 50 percent to a depth of 20 inches (51 cm) and is 50 to 75 percent below that depth. Rock fragments on the surface range from 0 to 40 percent gravel, 0 to 25 percent cobbles, 0 to 15 percent stones, and 0 to 10 percent boulders. Some pedons have a BA horizon. Some do not have a BCt horizon.

The A horizon has dry color of 10YR 5/3, 6/3, or 6/4 or 7.5YR 6/4 or 7/3. Moist color is 10YR 4/3 or 4/4 or 7.5YR 4/3 or 4/4. Texture is loam or gravelly loam with a high content of silt. The content of clay ranges from 15 to 20 percent. The horizon has 5 to 30 percent gravel and 0 to 5 percent cobbles. Reaction ranges from strongly acid to slightly acid.

The BAt horizon has dry color of 10YR 6/4 or 7/4 or 7.5YR 7/3. Moist color is 5YR 6/6; 7.5YR 5/4, 5/6, or 6/4; or 10YR 4/4. Texture is loam, gravelly loam, or very gravelly loam with a high content of silt. The content of clay ranges from 18 to 22 percent. The horizon has 0 to 40 percent gravel and 0 to 5 percent cobbles. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 6/4, 6/6, 7/3, 7/4, 8/4, or 8/6 or 5YR 4/4, 6/4, or 6/6. Moist color is 7.5YR 4/4, 4/6, or 5/4 or 5YR 4/4 or 4/6. Texture is loam, gravelly loam, or clay loam with a high content of silt, or it is silty clay loam. The content of clay ranges from 24 to 30 percent. The horizon has 0 to 30 percent gravel and 0 to 5 percent cobbles. Reaction is moderately acid or slightly acid.

The BCt horizon has dry color of 7.5YR 7/4 or 7/6. Moist color is 7.5YR 5/6. Texture is silty clay loam or gravelly clay loam with a high content of silt. The content of clay ranges from 29 to 37 percent. The content of gravel is 0 to 20 percent. Reaction ranges from strongly acid to slightly acid.

Moda Taxadjunct

The Moda taxadjunct consists of moderately deep, somewhat poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in swales on low terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 19 inches (483 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, active, thermic Abruptic Durixeralfs

Typical Pedon

Moda taxadjunct loam, on a southwest-facing slope of 2 percent, under a cover of annual grasses and forbs, at an elevation of 107 feet (33 m). When described on 2/8/2001, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches (0 to 5 cm); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; 10 percent clay; moderate thin platy structure; slightly hard, very friable, nonsticky, nonplastic; few fine and many very fine roots; few very fine and fine irregular pores; 5 percent fine irregular oxidized iron masses lining pores; 10 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

A2—2 to 6 inches (5 to 15 cm); brown (10YR 5/3) loam, brown (10YR 4/3) moist; 20 percent clay; moderate fine subangular blocky structure; hard, friable, nonsticky, slightly plastic; few very fine roots; few very fine tubular pores; 2 percent very fine irregular oxidized iron masses lining pores; 10 percent well rounded gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt1—6 to 13 inches (15 to 33 cm); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; 25 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; common very fine and fine tubular pores; 20 percent discontinuous distinct clay films; 5 percent well rounded gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

2Bt2—13 to 22 inches (33 to 56 cm); brown (7.5YR 5/4) clay, brown (7.5YR 5/3) moist; 45 percent clay; weak medium prismatic structure parting to moderate fine angular blocky; very hard, very firm, very sticky, very plastic; few very fine roots;

few very fine tubular pores; 50 percent continuous distinct clay films; 2 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

2Bkqm—22 inches (56 cm); indurated duripan; cemented by silica; common very fine roots on top of the horizon; 15 percent very fine irregular manganese masses at the top of the horizon; strongly effervescent.

Type location: Butte County, California; about 3.4 miles southeast of the Rancho Llano Seco headquarters, approximately 300 feet east of the Mt. Diablo meridian and 11,260 feet north of the Butte-Glenn County line; in an unsectionized area in the Llano Seco Land Grant; 39 degrees, 34 minutes, 3 seconds north latitude and 121 degrees, 54 minutes, 47 seconds west longitude; NAD27; USGS Quad: Llano Seco, California.

Range in Characteristics

Depth to an indurated duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 35 to 50 percent clay and 2 to 10 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is estimated to be 0.5 to 0.8 percent to a depth of 6 inches (15 cm) and less than 0.5 percent below that depth. By sum of cations, base saturation is assumed to be more than 75 percent throughout the profile. A fluctuating water table can occur between the top of the duripan and the surface of the soil from December through April. Redoximorphic features, such as soft oxidized iron masses with color of 7.5YR 4/4, 4/6, or 5/6 and manganese masses with color of N 2/0, occur throughout the profile. Rock fragments on the surface range from 0 to 10 percent gravel.

The A horizon has dry color of 10YR 5/2, 5/3, or 6/3. Moist color is 10YR 3/2, 3/3, or 4/3. Texture is loam. The content of clay ranges from 10 to 20 percent. The content of gravel is 5 to 10 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 10YR 6/2 or 6/3 or 7.5YR 6/4. Moist color is 10YR 3/4, 4/2, or 4/3 or 7.5YR 5/4. Texture is loam, sandy clay loam, or clay loam. The content of clay ranges from 24 to 30 percent. The content of gravel is 5 to 10 percent. Reaction is slightly acid or neutral.

The 2Bt horizon has dry color of 7.5YR 5/4 or 6/4. Moist color is 7.5YR 4/4, 5/3, or 5/4. Texture is clay. The content of clay ranges from 45 to 50 percent. The content of gravel is 0 to 10 percent. Reaction ranges from neutral to moderately alkaline.

The 2Bkqm horizon has dry color of 10YR 7/4. Moist color is 10YR 4/4 or 4/6. An indurated silica and lime capping ranges from 0.06 to 0.12 inch in thickness.

Some pedons have a flood deposit of silt loam about 0.25 inch (0.6 cm) thick on the surface.

The Moda taxadjunct is a taxadjunct because the mineralogy is most likely mixed rather than vermiculitic. This difference does not significantly affect the use, management, or interpretations of the soils.

Mounthope Series

The Mounthope series consists of deep, well drained soils that formed in colluvium and residuum derived from metasedimentary rocks, metavolcanic rocks (mainly greenschist), and intrusive igneous rocks (mainly quartz diorite and gabbro). These soils are on ridgetops and side slopes on Sierra Nevada foothills. Slopes range from 2 to 100 percent. The mean annual precipitation is about 43 inches (1,092 mm), and the mean annual air temperature is about 58 degrees F (14 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Mounthope loam, on a southeast-facing slope of 27 percent, under a cover of whiteleaf manzanita, toyon, buckbrush, interior live oak, blue oak, foothill pine, and Pacific poison oak, at an elevation of 1,640 feet (500 m). When described on 11/20/2000, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material.

A—1 to 3 inches (3 to 8 cm); brown (7.5YR 5/4) loam, reddish brown (5YR 4/4) moist; 20 percent clay; moderate medium subangular blocky structure parting to moderate fine granular; slightly hard, very friable, nonsticky, slightly plastic; few very fine roots; common fine and medium irregular pores; 5 percent subangular metavolcanic gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt1—3 to 7 inches (8 to 18 cm); yellowish red (5YR 5/6) loam, reddish brown (5YR 4/4) moist; 24 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine, few medium, and many coarse roots; common fine and few medium tubular pores; 5 percent discontinuous distinct clay films on surfaces along pores and 20 percent discontinuous distinct clay films on faces of peds; 10 percent subangular metavolcanic gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt smooth boundary.

Bt2—7 to 15 inches (18 to 38 cm); yellowish red (5YR 5/6) loam, reddish brown (5YR 4/4) moist; 26 percent clay; moderate medium subangular blocky structure; hard, friable, slightly sticky, moderately plastic; common fine and medium and few coarse roots throughout; common fine tubular pores; 10 percent discontinuous distinct clay films on surfaces along pores and 20 percent discontinuous distinct clay films on all faces of peds; 5 percent subangular metavolcanic gravel; slightly acid, pH 6.2 by Hellige-Truog; clear wavy boundary.

Bt3—15 to 22 inches (38 to 56 cm); yellowish red (5YR 5/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 28 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; few fine and medium roots; common fine and medium tubular pores; 10 percent discontinuous distinct clay films on surfaces along pores and 25 percent discontinuous distinct clay films on faces of peds; 25 percent subangular metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog; gradual wavy boundary.

Bt4—22 to 26 inches (56 to 66 cm); yellowish red (5YR 5/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 29 percent clay; moderate fine subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine and medium roots; few fine tubular pores; 10 percent discontinuous distinct clay films on surfaces along pores and 35 percent discontinuous distinct clay films on faces of peds; 30 percent subangular metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog; gradual wavy boundary.

Bt5—26 to 31 inches (66 to 79 cm); yellowish red (5YR 5/6) very gravelly clay loam, yellowish red (5YR 4/6) moist; 31 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine and medium roots; common fine and medium tubular pores; 15 percent discontinuous distinct clay films on surfaces along pores and 35 percent discontinuous distinct clay films on faces of peds; 50 percent subangular metavolcanic gravel; slightly acid, pH 6.4 by Hellige-Truog; gradual wavy boundary.

Bt6—31 to 42 inches (79 to 107 cm); yellowish red (5YR 5/6) very gravelly clay loam, yellowish red (5YR 4/6) moist; 28 percent clay; moderate fine subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; few fine roots; few fine tubular pores; 10 percent discontinuous distinct clay films on surfaces along pores and 35 percent discontinuous distinct clay films on faces of peds; 50

percent subangular metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

Bt7—42 to 52 inches (107 to 132 cm); reddish yellow (5YR 6/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 30 percent clay; weak fine subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; few fine roots; few fine tubular pores; 5 percent discontinuous distinct clay films on surfaces along pores and 15 percent discontinuous distinct clay films on faces of peds; 30 percent subangular metavolcanic gravel; slightly acid, pH 6.4 by Hellige-Truog; gradual smooth boundary.

Cr—52 inches (132 cm); moderately cemented greenschist bedrock.

Type location: Butte County, California; about 5.1 miles northeast of Oroville Dam, approximately 1,600 feet east and 1,050 feet south of the northwest corner of sec. 7, T. 20 N., R. 5 E.; 39 degrees, 36 minutes, 34.15 seconds north latitude and 121 degrees, 27 minutes, 33.20 seconds west longitude; NAD83; USGS Quad: Oroville Dam, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 59 to 63 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 200 days). The particle-size control section averages 20 to 27 percent clay and 10 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 3.5 percent to a depth of 15 inches (38 cm) and less than 1 percent from 15 to 52 inches (38 to 132 cm). Rock fragments on the surface range from 0 to 15 percent gravel, 0 to 10 percent cobbles, 0 to 15 percent stones, and 0 to 15 percent boulders.

The A horizon has dry color of 7.5YR 5/4, 6/4, 7/4, or 5/6 or 5YR 7/6. Moist color is 5YR 4/4 or 5/4 or 7.5YR 3/4 or 4/3. Texture is loam or gravelly loam with a high content of silt. The content of clay ranges from 17 to 25 percent. The content of gravel is 0 to 30 percent. Reaction ranges from moderately acid to neutral.

The upper part of the Bt horizon has dry color of 5YR 5/6 or 7.5YR 5/6. Moist color is 5YR 4/4 or 7.5YR 3/4. Texture is gravelly loam or loam. The content of clay ranges from 20 to 27 percent. The content of gravel is 0 to 10 percent. Reaction is slightly acid or moderately acid.

The lower part of the Bt horizon has dry color of 5YR 7/4, 4/6, 5/6, 6/6, or 7/6; 7.5YR 5/6, 6/6, 7/6, or 7/4; or 2.5YR 5/6, 6/6, or 7/6. Moist color is 5YR 3/4, 4/4, 4/6, 5/6, 5/8, or 8/4; 7.5YR 3/4, 4/4, or 4/6; or 2.5YR 4/6, 4/8, or 5/8. Texture is clay loam, very gravelly loam, gravelly clay loam, or very gravelly clay loam with a high content of silt. The content of clay ranges from 20 to 35 percent. The content of gravel is 5 to 50 percent, and the content of cobbles is 0 to 25 percent. Reaction is moderately acid or slightly acid.

The BCt horizon, where it occurs, has dry color of 7.5YR 5/6. Moist color is 5YR 4/6. Texture is extremely gravelly loam, extremely gravelly clay loam, or extremely gravelly clay with a high content of silt. The content of clay ranges from 25 to 27 percent in the upper part of the horizon and from 25 to 40 percent in the lower part. The horizon has 60 to 70 percent gravel and 0 to 20 percent cobbles. Reaction is moderately acid or slightly acid.

Mountyana Series

The Mountyana series consists of very deep, well drained soils that formed in weathered tephra over residuum derived from volcanic rocks. These soils are on volcanic ridges in the Cascade Mountains. Slopes range from 2 to 30 percent. The

mean annual precipitation is about 72 inches (1,829 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Fine-loamy, isotic, mesic Andic Haplohumults

Typical Pedon

Mountyana gravelly loam, on a southeast-facing slope of 10 percent, under a cover of mixed conifers, at an elevation of 3,640 feet (1,110 m). When described on 11/27/1995, the soil was dry throughout. (Colors are for dry soil unless otherwise noted).

Oi—0 to 1 inch (0 to 3 cm); pine litter.

Oe—1 to 2 inches (3 to 5 cm); partially decomposed pine litter.

A—2 to 5 inches (5 to 13 cm); reddish brown (5YR 5/4) gravelly loam, dark reddish brown (5YR 3/3) moist; 22 percent clay; strong fine and medium granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine to medium roots; many very fine to coarse irregular pores; noneffervescent; 1 percent cobbles and 30 percent gravel; moderately acid, pH 5.9 by pH meter 1:1 water; NaF pH 10.4; clear smooth boundary.

Bt1—5 to 9 inches (13 to 23 cm); reddish brown (5YR 5/4) gravelly loam, dark reddish brown (5YR 3/4) moist; 24 percent clay; strong fine and medium granular structure; slightly hard, friable, slightly sticky, moderately plastic; many very fine to medium roots; many very fine to coarse irregular pores; many distinct discontinuous clay films on faces of peds; noneffervescent; 2 percent cobbles and 18 percent gravel; moderately acid, pH 5.8 by pH meter 1:1 water; NaF pH 10.1; clear smooth boundary.

Bt2—9 to 14 inches (23 to 36 cm); reddish brown (5YR 5/4) gravelly clay loam, reddish brown (5YR 4/4) moist; 28 percent clay; moderate fine and medium granular structure; moderately hard, firm, slightly sticky, moderately plastic; many very fine to medium and common coarse roots; many very fine to coarse irregular pores; many distinct discontinuous clay films on faces of peds; noneffervescent; 2 percent cobbles and 18 percent gravel; moderately acid, pH 5.8 by meter 1:1 water; NaF pH 9.9; clear smooth boundary.

Bt3—14 to 19 inches (36 to 48 cm); reddish brown (5YR 5/4) gravelly clay loam, yellowish red (5YR 4/6) moist; 30 percent clay; moderate medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine, fine, and coarse and many medium roots; many very fine to coarse irregular pores; many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 2 percent cobbles and 15 percent gravel; moderately acid, pH 5.7 by pH meter 1:1 water; NaF pH 9.9; clear smooth boundary.

Bt4—19 to 26 inches (48 to 66 cm); brown (7.5YR 5/4) gravelly clay loam, yellowish red (5YR 4/6) moist; 33 percent clay; moderate medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine to coarse roots; many very fine and fine and common medium and coarse irregular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 2 percent cobbles and 15 percent gravel; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 9.9; clear smooth boundary.

Bt5—26 to 38 inches (66 to 97 cm); brown (7.5YR 5/4) gravelly clay loam, yellowish red (5YR 4/6) moist; 33 percent clay; strong medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; few very fine, fine, and coarse and common medium roots; many very fine and fine and common medium and coarse tubular pores; many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 2 percent cobbles and 20 percent gravel; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 9.9; clear irregular boundary.

Bt/Cr—38 to 53 inches (97 to 135 cm); brown (7.5YR 5/4) extremely gravelly clay loam, strong brown (7.5YR 4/6) moist; 28 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine and fine and common medium tubular pores; many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 40 percent gravel, 20 percent cobbles, and 10 percent stones; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 9.6; clear smooth boundary.

Cr/Bt—53 to 66 inches (135 to 168 cm); brown (7.5YR 5/4) extremely gravelly loam, strong brown (7.5YR 4/6) moist; 24 percent clay; weak fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine and fine and common medium tubular pores; few distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 30 percent gravel, 20 percent cobbles, and 20 percent stones; strongly acid, pH 5.2 by pH meter 1:1 water; NaF pH 9.6; clear irregular boundary.

Cr—66 to 72 inches (168 to 183 cm); moderately cemented mudflow breccia; few very fine and fine roots; common very fine and fine tubular pores; cracks occurring more than 4 inches (10 cm) apart.

Type location: Butte County, California; about 1 mile east-southeast of Ewalt Camp, approximately 100 feet south and 1,500 feet west of the northeast corner of sec. 2, T. 24 N., R. 3 E.; 39 degrees, 58 minutes, 26.4 seconds north latitude and 121 degrees, 36 minutes, 7.2 seconds west longitude; NAD27; USGS Quad: Stirling, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 54 to 56 degrees F (12 to 13 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 18 to 35 percent clay and 2 to 25 percent rock fragments, mostly gravel. Mineralogy is isotic. Acid oxalate extractable Al plus ½ Fe ranges from 1.88 to 1.61 to a depth of 9 inches (23 cm). Rock fragments on the surface range from 5 to 30 percent gravel.

The A horizon has dry color of 7.5YR 4/4, 6/3, or 6/4 or 5YR 5/4 or 6/6. Moist color is 5YR 3/2, 3/3, or 3/4 or 7.5YR 3/3, 3/4, or 4/3. Texture is gravelly loam, gravelly sandy loam, loam, or sandy loam. The content of clay ranges from 15 to 25 percent. The horizon has 2 to 30 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 6 to 10 percent. By sum of cations, base saturation ranges from 25 to 35 percent. By ammonium acetate, CEC ranges from 20 to 30. NaF pH is 9.8 to 11. Reaction ranges from moderately acid to neutral.

The upper part of the Bt horizon has dry color of 5YR 5/4, 5/6, 6/4, or 6/6 or 7.5YR 5/4 or 6/6. Moist color is 5YR 3/3, 3/4, 4/4, 4/6, 5/4, 5/6, or 6/4 or 2.5YR 3/4, 4/4, or 4/6. Texture is gravelly loam, gravelly clay loam, loam, or clay loam. The content of clay ranges from 18 to 35 percent. The content of gravel is 2 to 20 percent, and the content of cobbles is 0 to 2 percent. The content of organic matter is 1 to 5 percent. By sum of cations, base saturation ranges from 30 to 37 percent. By ammonium acetate, CEC ranges from 14 to 22. NaF pH is 9.5 to 10.5. Reaction is moderately acid or slightly acid.

The lower part of the Bt horizon has dry color of 5YR 5/4, 5/6, 6/4, or 6/6; 7.5YR 5/4 or 6/6; or 10YR 6/6. Moist color is 5YR 4/4, 4/6, 5/4, 5/6, or 6/4; 7.5YR 4/4 or 5/6; or 10YR 4/4. Texture is gravelly clay loam, gravelly loam, gravelly sandy loam, clay loam, loam, or sandy loam. The content of clay ranges from 18 to 35 percent. The content of gravel is 2 to 25 percent, and the content of cobbles is 0 to 5 percent. The content of organic matter is 0.5 to 1 percent. By sum of cations, base saturation ranges from 19 to 26 percent. By ammonium acetate, CEC ranges from 10 to 15. NaF pH is 9.5 to 10. Reaction ranges from very strongly acid to slightly acid.

The Bt/Cr horizon has dry color of 7.5YR 5/4 or 10YR 7/6. Moist color is 7.5YR 4/6 or 10YR 6/8. Texture is extremely gravelly clay loam, very gravelly clay loam, extremely gravelly loam, very gravelly loam, or very cobbly loam. The content of clay ranges from 18 to 30 percent. The horizon has 20 to 50 percent gravel, 20 to 50 percent cobbles, and 0 to 20 percent stones. The content of organic matter is 0.1 to 1 percent. By sum of cations, base saturation ranges from 5 to 10 percent. By ammonium acetate, CEC ranges from 10 to 15. NaF pH is 9.2 to 9.6. Reaction is very strongly acid or strongly acid.

The Cr/Bt horizon has dry color of 7.5YR 5/4 or 10YR 7/6. Moist color is 7.5YR 4/6 or 10YR 6/8, 5/4, or 4/3. Texture is extremely gravelly or extremely cobbly loam. The content of clay ranges from 16 to 25 percent. The horizon has 20 to 50 percent gravel, 20 to 50 percent cobbles, and 0 to 20 percent stones. The content of organic matter is 0.1 to 1 percent. By sum of cations, base saturation ranges from 5 to 10 percent. By ammonium acetate, CEC ranges from 10 to 15. NaF pH is 9.0 to 9.6. Reaction is very strongly acid or strongly acid.

Mudwash Series

The Mudwash series consists of very deep, well drained soils that formed in tephra deposited over colluvium and residuum derived from basalt. These soils are on the tops and side slopes of basalt ridges on volcanic Sierra Nevada mountains. Slopes range from 0 to 50 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Medial over loamy, mixed over isotic, mesic Alfic Humic Haploxerands

Typical Pedon

Mudwash gravelly medial sandy loam, on a southwest-facing slope of 7 percent, under a cover of mixed conifers, at an elevation of 4,650 feet (1,417 m). When described on 10/7/1997, the soil was slightly moist from a depth of 4 to 52 inches (10 to 132 cm) and dry below a depth of 52 inches (132 cm). Clay percentages are based on the apparent field texture. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 2.54 cm); fresh litter.

Oa—1 to 4 inches (2.54 to 10 cm); decomposed litter.

A1—4 to 8 inches (10 to 20 cm); brown (7.5YR 4/2) gravelly medial sandy loam, dark brown (7.5YR 3/2) moist; 10 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common very fine to medium roots; many very fine irregular pores; 15 percent basalt gravel and 5 percent basalt cobbles; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 10.5; abrupt smooth boundary.

A2—8 to 13 inches (20 to 33 cm); brown (7.5YR 4/2) gravelly medial sandy loam, dark brown (7.5YR 3/2) moist; 12 percent clay; weak fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common coarse and many fine and medium roots; many very fine irregular pores; 20 percent basalt gravel and 5 percent basalt cobbles; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.

Bw—13 to 26 inches (33 to 66 cm); brown (7.5YR 4/3) gravelly medial sandy loam, dark reddish brown (5YR 3/3) moist; 15 percent clay; moderate fine subangular blocky structure; loose, very friable, nonsticky, slightly plastic; common fine to coarse roots; many very fine irregular pores; 25 percent basalt gravel and 5 percent basalt cobbles; strongly acid, pH 5.1 by pH meter 1:1 water; NaF pH 10.0; clear wavy boundary.

2Bt1—26 to 35 inches (66 to 89 cm); grayish brown (10YR 5/2) gravelly loam, dark brown (7.5YR 3/2) moist; 22 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine to coarse roots; many very fine tubular pores; few distinct continuous clay films on faces of peds; 20 percent rounded basalt gravel; strongly acid, pH 5.1 by pH meter 1:1 water; NaF pH 9.3; clear smooth boundary.

2Bt2—35 to 52 inches (89 to 132 cm); brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; 25 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and medium roots; many very fine and common fine tubular pores; common distinct continuous clay films on faces of peds; 20 percent rounded basalt gravel; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 9.4; abrupt smooth boundary.

2BCt—52 to 72 inches (132 to 183 cm); brown (10YR 5/3) extremely gravelly loam, dark brown (10YR 3/3) moist; 24 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and medium roots; common very fine tubular pores; few distinct continuous clay films on faces of peds; 80 percent rounded basalt gravel; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 9.3; gradual smooth boundary.

2Cr—72 to 89 inches (183 to 226 cm); moderately cemented basalt bedrock; few fine roots; white and yellow concretions and manganese stains; no fractures.

Type location: Plumas County, California; about 1.6 miles southeast of Cascade, approximately 450 feet west and 500 feet south of the northeast corner of sec. 14, T. 21 N., R. 7 E.; 39 degrees, 41 minutes, 9.3 seconds north latitude and 121 degrees, 9 minutes, 21.9 seconds west longitude; NAD83; USGS Quad: Cascade, California.

Range in Characteristics

The depth to paralithic bedrock (basalt, mudflow, or volcaniclastic material) is more than 60 inches (152 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July to September (about 90 days). The particle-size control section averages 11 to 30 percent clay and 5 to 27 percent rock fragments in the medial part and 23 to 35 percent clay and 5 to 20 percent rock fragments in the loamy part. Mineralogy is mixed over isotic. Rock fragments on the surface range from 0 to 20 percent gravel and 0 to 25 percent cobbles. Some pedons have a C horizon and/or do not have a 2BCt horizon.

The A horizon has dry color of 10YR 4/2 or 4/3; 7.5YR 4/2, 4/3, or 4/4; or 5YR 4/6, 5/3, or 5/4. Moist color is 10YR 2/1 or 2/2, 7.5YR 3/2 or 3/3, or 5YR 3/2, 3/3, or 3/4. Texture is gravelly medial sandy loam, gravelly medial loam, medial sandy loam, or medial loam. The content of clay ranges from 8 to 18 percent. The horizon has 5 to 20 percent gravel and 5 to 10 percent cobbles. The content of organic matter is 5 to 10 percent. By sum of cations, base saturation ranges from 15 to 20 percent. NaF pH is 10.0 to 11.5. Acid oxalate extractable Al plus ½ Fe ranges from 2.2 to 2.5. P retention ranges from 90 to 92. Reaction ranges from slightly acid to strongly acid.

The Bw horizon has dry color of 7.5YR 4/3 or 5/3 or 5YR 4/6 or 5/4. Moist color is 7.5YR 3/2, 3/4, or 4/2 or 5YR 3/3, 4/3, or 4/4. Texture is gravelly medial sandy loam, gravelly medial loam, medial sandy loam, or medial loam. The content of clay ranges from 12 to 22 percent. The horizon has 5 to 25 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 5 to 9 percent. By sum of cations, base saturation ranges from 10 to 25 percent. NaF pH is 10.5 to 11. Acid oxalate extractable Al plus ½ Fe ranges from 2.0 to 2.5. P retention ranges from 85 to 90. Reaction ranges from slightly acid to very strongly acid.

The 2Bt horizon has dry color of 10YR 4/3, 5/2, 5/3, or 8/4; 7.5YR 4/3, 5/3, or 5/4; 5YR 4/4 or 4/6; or 2.5YR 4/6. Moist color is 10YR 3/3; 7.5YR 3/2, 3/3, 4/2, 4/3, or 4/6; 5YR 3/2, 3/3, 4/3, or 4/4; or 2.5YR 3/6 or 4/6. Texture is gravelly loam, loam, sandy

loam, clay loam, sandy clay loam, silty clay loam, gravelly sandy clay loam, or cobbly loam. The content of clay ranges from 18 to 38 percent. The content of gravel is 0 to 20 percent. The content of cobbles also is 0 to 20 percent. The content of organic matter is 0.8 to 5 percent. By sum of cations, base saturation ranges from 50 to 70 percent. NaF pH is 9.3 to 11.3. Acid oxalate extractable Al plus 1/2 Fe ranges from 1.0 to 1.8. P retention ranges from 55 to 70. Reaction ranges from slightly acid to extremely acid.

The 2BCt horizon has dry color of 10YR 4/2, 5/3, or 6/3 or 7.5YR 5/3 or 6/3. Moist color is 10YR 3/1, 3/3, 4/3, 4/4, or 5/2 or 7.5YR 4/2, 4/3, or 4/4. Texture is extremely gravelly loam, gravelly sandy loam, loam, coarse sandy loam, sandy clay loam, or silty clay loam. The content of clay ranges from 15 to 28 percent. The content of gravel is 5 to 80 percent. The content of organic matter is 0.8 to 1 percent. By sum of cations, base saturation ranges from 50 to 70 percent. NaF pH is 9.3 to 10.5. Acid oxalate extractable Al plus 1/2 Fe ranges from 0.7 to 1. P retention ranges from 50 to 60. Reaction ranges from moderately acid to extremely acid.

Munjar Series

The Munjar series consists of moderately deep, moderately well drained soils that formed in alluvium derived from dominantly volcanic rocks. These soils are on bars on fan terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Typic Durixeralfs

Typical Pedon

Munjar gravelly loam, on a southwest-facing slope of 1 percent, under a cover of annual grasses, at an elevation of 275 feet (84 m). When described on 4/10/1999, the soil was dry to a depth of 9 inches (23 cm) and slightly moist from 9 to 46 inches (23 to 117 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 20 percent clay; strong fine and medium subangular blocky structure parting to strong fine granular; hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine vesicular and tubular pores; 15 percent andesite gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt1—2 to 5 inches (5 to 13 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 23 percent clay; moderate medium platy structure parting to moderate medium and coarse subangular blocky; hard, friable, slightly sticky, slightly plastic; common very fine roots; few medium and coarse and common very fine vesicular and tubular pores; 80 percent continuous distinct clay films on faces of peds; 30 percent andesite gravel; neutral, pH 6.7 by Hellige-Truog; clear smooth boundary.

Bt2—5 to 9 inches (13 to 23 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 26 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; few medium and many very fine vesicular and tubular pores; 100 percent continuous distinct clay films on faces of peds; 2 percent andesite cobbles and 15 percent andesite gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt3—9 to 16 inches (23 to 41 cm); brown (7.5YR 5/4) gravelly loam, brown (7.5YR 4/3) moist; 24 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; many very fine to medium vesicular and tubular pores; 100 percent continuous distinct clay films on faces of peds; 10 percent andesite cobbles and 20 percent andesite gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bt4—16 to 22 inches (41 to 56 cm); brown (7.5YR 5/4) extremely gravelly clay loam, dark brown (7.5YR 3/4) moist; 28 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine roots; many very fine and fine and many medium vesicular and tubular pores; 100 percent continuous distinct clay films on faces of peds; 25 percent andesite cobbles and 40 percent andesite gravel; slightly alkaline, pH 7.4 by Hellige-Truog; abrupt smooth boundary.

2Btq—22 to 31 inches (56 to 79 cm); brown (7.5YR 5/4) extremely cobbly sandy clay, dark brown (7.5YR 3/4) moist; 37 percent clay; massive; very hard, firm, noncemented, moderately sticky, moderately plastic; few very fine roots; common very fine to medium vesicular and tubular pores; 100 percent continuous distinct clay films on rock fragments; 35 percent andesite cobbles and 35 percent andesite gravel; slightly alkaline, pH 7.6 by Hellige-Truog; gradual smooth boundary.

2Btqm—31 to 46 inches (79 to 117 cm); strongly cemented duripan; brown (7.5YR 5/4) extremely gravelly sandy clay loam, brown (7.5YR 4/3) moist; 27 percent clay; massive; very hard, firm, strongly cemented by silica, moderately sticky, moderately plastic; few very fine roots; common very fine and fine vesicular and tubular pores; 100 percent continuous distinct clay films on rock fragments; 5 percent andesite stones, 35 percent andesite cobbles, and 40 percent andesite gravel; slightly alkaline, pH 7.8 by Hellige-Truog.

Type location: Butte County, California; about 6.3 miles northeast of Nord, approximately 1,100 feet west and 2,300 feet south of the northeast corner of sec. 7, T. 23 N., R. 1 E.; 39 degrees, 51 minutes, 47 seconds north latitude and 121 degrees, 53 minutes, 14 seconds west longitude; NAD27; USGS Quad: Nord, California.

Range in Characteristics

Depth to the extremely gravelly duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 27 to 30 percent clay and 35 to 45 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 12 inches (30 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 5 to 30 percent gravel.

The A horizon has dry color of 7.5YR 6/4. Moist color is 7.5YR 4/3 or 5YR 3/3. Texture is gravelly loam. The content of clay ranges from 20 to 24 percent. The content of gravel is 15 to 30 percent. The content of organic matter is 2 to 5 percent. Reaction is slightly acid or neutral.

The Bt1 horizon has dry color of 7.5YR 6/4 or 6/6. Moist color is 7.5YR 4/3 or 5YR 4/3. Texture is gravelly loam. The content of clay ranges from 23 to 24 percent. The content of gravel is 15 to 30 percent. The content of organic matter is 0.8 to 1.2 percent. Reaction is slightly acid or neutral.

The Bt2, Bt3, and Bt4 horizons have dry color or 7.5YR 5/4, 6/4, or 6/6 or 5YR 5/4. Moist color is 7.5YR 3/4 or 4/3 or 5YR 4/3. Texture is gravelly loam, extremely gravelly clay loam, very gravelly loam, or very cobbly clay loam. The content of clay ranges from 24 to 35 percent. The horizons have 15 to 40 percent gravel, 2 to 40 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 0.5 to 0.8 percent. Reaction is neutral or slightly alkaline.

The 2Btq horizon has dry color of 7.5YR 5/4. Moist color is 7.5YR 3/4. Texture is extremely cobbly sandy clay. The content of clay ranges from 35 to 40 percent. The horizon has 30 to 35 percent gravel and 20 to 35 percent cobbles. The content of organic matter is 0 to 0.5 percent. Reaction is neutral or slightly alkaline.

The 2Btqm horizon has dry color of 7.5YR 5/4. Moist color is 7.5YR 3/4. Texture is extremely gravelly sandy clay loam. The content of clay ranges from 27 to 35 percent.

The horizon has 40 to 45 percent gravel, 10 to 35 percent cobbles, and 0 to 5 percent stones. Reaction is neutral or slightly alkaline.

Neerdobe Series

The Neerdobe series consists of moderately deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in flood basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Duraquerts

Typical Pedon

Neerdobe clay, on a slope of less than 1 percent, under a cover of rice, at an elevation of 98 feet (30 m). When described on 5/3/1995, the soil was moist throughout. The water table was at a depth of 38 inches (97 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 5 inches (0 to 13 cm); dark gray (10YR 4/1) clay, dark gray (10YR 4/1) moist; 57 percent clay; moderate medium subangular blocky structure parting to strong fine granular; extremely hard, very firm, moderately sticky, very plastic; few very fine and common fine roots; few fine irregular pores; noneffervescent; moderately acid, pH 5.8 by pH meter 1:1 water; abrupt smooth boundary.

Bssg1—5 to 15 inches (13 to 38 cm); dark gray (10YR 4/1) clay, dark gray (10YR 4/1) moist; 55 percent clay; moderate medium prismatic structure parting to moderate fine angular blocky; extremely hard, very firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; continuous slickensides; common fine irregular strong brown (7.5YR 4/6) oxidized iron masses and common fine and coarse threadlike gray (10YR 6/1) iron depletions; noneffervescent; slightly alkaline, pH 7.4 by pH meter 1:1 water; clear smooth boundary.

Bssg2—15 to 23 inches (38 to 58 cm); dark gray (10YR 4/1) clay, dark gray (10YR 4/1) moist; 56 percent clay; moderate medium prismatic structure parting to moderate fine angular blocky; extremely hard, very firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; many slickensides; common fine irregular strong brown (7.5YR 4/6) oxidized iron masses and common fine threadlike gray (10YR 6/1) iron depletions; noneffervescent; moderately alkaline, pH 7.9 by pH meter 1:1 water; clear smooth boundary.

Bssg3—23 to 28 inches (58 to 71 cm); dark grayish brown (10YR 4/2) clay, dark gray (10YR 4/1) moist; 56 percent clay; moderate medium angular blocky structure; extremely hard, very firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; common slickensides; common fine and medium spherical carbonate concretions; common fine irregular gray (10YR 6/1) and few fine spherical gray (N 5/0 dry) iron depletions; noneffervescent; moderately alkaline, pH 8.2 by pH meter 1:1 water; abrupt smooth boundary.

Bk—28 to 33 inches (71 to 84 cm); light brownish gray (10YR 6/2) clay, grayish brown (10YR 5/2) moist; 55 percent clay; moderate fine angular blocky structure parting to strong fine angular blocky; slightly hard, friable, moderately sticky, very plastic; common very fine and few fine tubular pores; common fine irregular carbonate concretions and common fine irregular carbonate masses; common fine threadlike gray (10YR 6/1) iron depletions; strongly effervescent; strongly alkaline, pH 8.5 by pH meter 1:1 water; abrupt smooth boundary.

2Bkq—33 to 38 inches (84 to 97 cm); very pale brown (10YR 7/3) loam, brown (10YR 5/3) moist; 22 percent clay; strong thin platy structure; slightly hard, friable, weakly cemented, slightly sticky, slightly plastic; common fine and few very fine tubular pores; common fine threadlike gray (10YR 6/1 dry) iron depletions

between peds; strongly effervescent; strongly alkaline, pH 8.6 by pH meter 1:1 water; abrupt smooth boundary.

2Bkqm—38 to 56 inches (97 to 142 cm); indurated duripan; very pale brown (10YR 7/3) loam, brown (10YR 4/3) moist; 18 percent clay; strong thin platy structure; masses of silica; silica and lime threads throughout the duripan; slightly effervescent; strongly alkaline, pH 8.6 by pH meter 1:1 water.

Type location: Butte County, California; about 3 miles southwest of Nelson, approximately 2,200 feet east and 1,900 feet north of the southwest corner of sec. 7, T. 19 N., R. 2 E.; 39 degrees, 30 minutes, 48 seconds north latitude and 121 degrees, 47 minutes, 30 seconds west longitude; NAD27; USGS Quad: Nelson, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 66 degrees F (17 to 19 degrees C). The soil moisture control section is dry from June to October (120 to 125 days). The particle-size control section averages 40 to 60 percent clay. By ammonium acetate, base saturation ranges from 90 to 100 percent throughout the profile. The depth to carbonates ranges from 15 to 38 inches (38 to 97 cm). SAR is 0 to 2 throughout the profile. The content of exchangeable sodium is 1 to 4 percent throughout the profile. Electrical conductivity is 0 to 1 mmho/cm throughout the profile. Reversible, surface-initiated cracks 1 to 3 inches (2.54 to 8 cm) wide extend to a depth of 20 to 36 inches (51 to 91 cm) from May 15 to October 15 (150 days) when the soils are not irrigated. Common or many slickensides are in the Bssg horizon. A fluctuating water table can occur from the top of the duripan to the surface of the soil from December through May. Redoximorphic features, such as manganese masses with color of N 2/0, oxidized iron masses with color of 7.5YR 4/4, and matrix chromas of 2 or less, occur in the horizons above the duripan. Some pedons have few or common manganese nodules. Some have overwash of silt loam 6 to 20 inches (15 to 51 cm) thick and may have strata of silt loam, very fine sandy loam, loamy very fine sand, sandy loam, fine sandy loam, or loam with 2 to 25 percent clay. Some pedons do not have calcium carbonate.

The Ap horizon has dry color of 10YR 3/1, 4/1, 4/2, or 5/2. Moist color is 10YR 3/1, 4/1, or 3/2. Texture is clay or clay loam. The content of clay ranges from 35 to 60 percent. The content of gravel is 0 to 2 percent. The content of organic matter is 1 to 2.5 percent. Reaction ranges from moderately acid to neutral.

The Bssg horizon has dry color of 10YR 3/1, 4/1, 4/2, or 5/2. Moist color is 10YR 3/1, 3/2, 4/1, or 4/2. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. The content of organic matter is 0.5 to 1 percent. Reaction is slightly alkaline or moderately alkaline.

The Bk horizon has dry color of 10YR 4/1, 4/2, 5/1, 5/2, or 5/3. Moist color is 10YR 3/1, 3/2, 3/3, 4/2, or 4/3. Texture is clay or clay loam. The content of clay ranges from 35 to 60 percent. The content of organic matter is 0.1 to 0.5 percent. Effervescence ranges from slight to strong. Reaction is moderately alkaline or strongly alkaline.

The 2Bkq horizon has dry color of 10YR 7/3 or 8/3. Moist color is 10YR 4/3 or 5/3. Texture is loam. The content of clay ranges from 18 to 27 percent. The horizon is moderately cemented or strongly cemented with silica and lime. Effervescence is moderate or strong.

The 2Bkqm horizon has dry color of 10YR 4/3, 5/3, 6/3, 7/3, or 8/3. Moist color is 10YR 3/3, 4/3, or 5/3 or 7.5YR 4/4. The horizon is weakly cemented to indurated with silica. Effervescence ranges from slight to violent.

Obskel Series

The Obskel series consists of deep, well drained soils that formed in weathered tephra over residuum and colluvium derived from coarse grained metamorphic rocks, mainly metadiorite. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 15 to 70 percent. The mean annual precipitation is about 75 inches (1,905 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Loamy-skeletal, isotic, mesic Andic Haploxerults

Typical Pedon

Obskel very gravelly sandy loam, on a west-southwest-facing slope of 25 percent, under a cover of mixed conifers, at an elevation of 4,340 feet (1,323 m). When described on 9/29/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); needles and twigs.
Oe—0.5 to 1 inch (1 to 2 cm); partially decomposed needles and twigs.
A—1 to 4 inches (2 to 9 cm); light brown (7.5YR 6/4) very gravelly sandy loam, brown (7.5YR 4/3) moist; 12 percent clay; weak fine granular structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine to coarse irregular and tubular pores; 40 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.0; clear smooth boundary.
Bt1—4 to 9 inches (9 to 22 cm); light brown (7.5YR 6/4) very gravelly sandy loam, brown (7.5YR 4/4) moist; 14 percent clay; weak fine and medium granular structure; soft, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine to coarse irregular and tubular pores; clay bridges between sand grains; 40 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; NaF pH 9.8; clear smooth boundary.
Bt2—9 to 19 inches (22 to 47 cm); reddish yellow (7.5YR 7/6) very gravelly sandy loam, brown (7.5YR 4/4) moist; 17 percent clay; moderate fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine to medium and common coarse roots; many very fine to medium irregular and tubular pores; many faint continuous clay films on faces of peds; 35 percent gravel and 5 percent cobbles; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 9.8; clear smooth boundary.
Bt3—19 to 30 inches (47 to 77 cm); pink (7.5YR 7/4) very gravelly loam, reddish yellow (7.5YR 6/6) moist; 19 percent clay; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine to medium and few coarse roots; many very fine to medium irregular and tubular pores; many faint continuous clay films on faces of peds; 25 percent gravel and 15 percent cobbles; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 9.5; gradual wavy boundary.
Bt4—30 to 56 inches (77 to 141 cm); yellow (10YR 8/6) very gravelly loam, yellow (10YR 7/8) moist; 18 percent clay; moderate fine and medium subangular blocky structure; soft, nonsticky, nonplastic; common very fine to medium and few coarse roots; many very fine and fine and common medium irregular and tubular pores; many faint continuous clay films on faces of peds; 30 percent gravel and 10 percent cobbles; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 9.1; abrupt smooth boundary.
Cr—56 inches (141 cm); very weakly cemented metadiorite bedrock; roots occurring more than 4 inches (10 cm) apart; rock fractures occurring less than 4 inches (10 cm) apart.

Type location: Butte County, California; about 1 mile southwest of Inskip,

approximately 2,250 feet south and 600 feet east of the northwest corner of sec. 32, T. 25 N., R. 4 E.; 39 degrees, 58 minutes, 52.9 seconds north latitude and 121 degrees, 33 minutes, 23.5 seconds west longitude; NAD83; USGS Quad: Stirling, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 52 to 54 degrees F (11 to 12 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 12 to 18 percent clay and 35 to 65 percent rock fragments, mostly gravel. Mineralogy is isotic. Rock fragments on the surface range from 15 to 35 percent gravel, 0 to 25 percent cobbles, 0 to 20 percent stones, and 0 to 10 percent boulders. Some pedons have Bw and C horizons.

The A horizon has dry color of 5YR 5/3 or 7.5YR 5/4, 6/3, 6/4, or 7/3. Moist color is 5YR 3/3 or 7.5YR 4/2, 4/3, or 4/4. Texture is very gravelly or gravelly sandy loam. The content of clay ranges from 8 to 16 percent. The horizon has 15 to 40 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. NaF pH is 9.8 to 11.0. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 5YR 4/6, 5/6, or 6/6; 7.5YR 6/3, 6/4, 7/4, or 7/6; or 10YR 5/6, 6/4, 6/6, 7/4, 7/6, 7/8, or 8/6. Moist color is 5YR 3/4, 4/4, or 4/6; 7.5YR 3/4, 4/2, 4/3, 4/4, 4/6, 5/4, 5/6, 6/6, or 6/8; or 10YR 4/4, 4/6, 5/4, 5/6, 5/8, or 7/8. Texture is sandy loam, gravelly sandy loam, very gravelly sandy loam, very cobbly sandy loam, very gravelly loam, very cobbly loam, gravelly sandy clay loam, or very gravelly sandy clay loam. The content of clay ranges from 10 to 24 percent. The horizon has 10 to 45 percent gravel, 0 to 20 percent cobbles, and 0 to 10 percent stones. NaF pH is 9.0 to 11.0. Reaction ranges from very strongly acid to slightly acid.

Obstruction Series

The Obstruction series consists of very deep, well drained soils that formed in weathered tephra over residuum and colluvium derived from coarse grained metamorphic rocks, mainly metadiorite. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 75 inches (1,905 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Fine-loamy, isotic, mesic Andic Haploxerults

Typical Pedon

Obstruction gravelly sandy loam, on a west-northwest-facing slope of 45 percent, under a cover of mixed conifers, at an elevation of 4,235 feet (1,291 m). When described on 11/29/1995, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 4 inches (0 to 10 cm); needles, twigs, and a partially decomposed log.

A—4 to 7 inches (10 to 18 cm); light brown (7.5YR 6/4) gravelly sandy loam, brown (7.5YR 4/4) moist; 17 percent clay; strong fine granular structure; soft, very friable, slightly sticky, nonplastic; many very fine and common fine roots; many very fine to medium and common coarse irregular pores; 25 percent subrounded gravel; moderately acid, pH 6.1 by pH meter 1:1 water; NaF pH 10.1; clear smooth boundary.

Bt1—7 to 11 inches (18 to 28 cm); light brown (7.5YR 6/4) gravelly sandy clay loam, brown (7.5YR 4/4) moist; 20 percent clay; moderate medium subangular blocky structure parting to strong fine granular; soft, very friable, slightly sticky, slightly plastic; many very fine and common fine and medium roots; many very fine and

fine tubular and common medium and coarse irregular and tubular pores; many distinct discontinuous clay films on faces of peds and in pores; 25 percent gravel; slightly acid, pH 6.1 by pH meter 1:1 water; NaF pH 10.3; clear smooth boundary.

Bt2—11 to 18 inches (28 to 46 cm); pink (7.5YR 7/4) gravelly fine sandy loam, reddish brown (5YR 4/4) moist; 19 percent clay; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many very fine and common fine to coarse roots; many very fine and fine irregular and tubular and many medium and common coarse tubular pores; common distinct discontinuous clay films on faces of peds and in pores; 20 percent gravel and 3 percent cobbles; slightly acid, pH 6.1 by pH meter 1:1 water; NaF pH 9.9; clear smooth boundary.

Bt3—18 to 25 inches (46 to 64 cm); reddish yellow (5YR 7/6) gravelly sandy clay loam, yellowish red (5YR 5/6) moist; 23 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium and common coarse tubular pores; many distinct discontinuous clay films on faces of peds and in pores; 10 percent subrounded gravel and 5 percent rounded cobbles; slightly acid, pH 6.1 by pH meter 1:1 water; NaF pH 9.4; clear smooth boundary.

Bt4—25 to 33 inches (64 to 84 cm); pink (5YR 7/4) sandy clay loam, yellowish red (5YR 5/6) moist; 21 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine and fine and common medium tubular pores; many distinct discontinuous clay films on faces of peds and in pores; 10 percent gravel; moderately acid, pH 5.8 by pH meter 1:1 water; NaF pH 9.2; abrupt smooth boundary.

Bt5—33 to 44 inches (84 to 112 cm); reddish yellow (7.5YR 7/6) fine sandy loam, strong brown (7.5YR 5/6) moist; 18 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, nonplastic; many very fine and common fine and medium roots; many very fine and fine and common medium tubular pores; common distinct discontinuous clay films on faces of peds and in pores; 10 percent gravel; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 9.1; abrupt wavy boundary.

Bt6—44 to 64 inches (112 to 163 cm); reddish yellow (7.5YR 8/6) gravelly fine sandy loam, reddish yellow (7.5YR 6/8) moist; 11 percent clay; weak fine and medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; few distinct discontinuous and common faint discontinuous clay films on faces of peds and in pores; 18 percent gravel; strongly acid, pH 5.2 by pH meter 1:1 water; clear irregular boundary.

Bt7—64 to 84 inches (163 to 213 cm); yellow (10YR 8/6) gravelly fine sandy loam, brownish yellow (10YR 6/8) moist; 5 percent clay; weak fine subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common very fine to medium roots; many very fine and common fine and medium tubular pores; few distinct discontinuous and common faint discontinuous clay films on faces of peds and in pores; 20 percent gravel; very strongly acid, pH 5.0 by pH meter 1:1 water; clear irregular boundary.

Cr—84 to 89 inches (213 to 226 cm); moderately cemented metadiorite bedrock; massive; few very fine roots; few very fine tubular pores; cracks occurring more than 4 inches (10 cm) apart.

Type location: Butte County, California; about 1 mile south-southwest of Inskip Cemetery, approximately 1,350 feet north and 1,100 feet west of the southeast corner of sec. 5, T. 24 N., R. 4 E.; 39 degrees, 57 minutes, 43.2 seconds north latitude and 121 degrees, 32 minutes, 37.07 seconds west longitude; NAD27; USGS Quad: Stirling City, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 18 to 23 percent clay and 5 to 35 percent rock fragments, mostly gravel. Mineralogy is isotic. Acid oxalate extractable Al plus ½ Fe ranges from 1 to 1.5 to a depth of 10 inches (25 cm). Rock fragments on the surface range from 5 to 35 percent gravel, 0 to 25 percent cobbles, 0 to 20 percent stones, and 0 to 10 percent boulders. Some pedons have hue of 2.5YR in the Bt horizon, and some have Bw and C horizons.

The A horizon has dry color of 5YR 4/3 or 6/4, 7.5YR 5/4 or 6/4, or 10YR 5/3 or 6/6. Moist color is 5YR 3/3 or 4/4; 7.5YR 4/3, 4/4, or 4/6; or 10YR 3/2. Texture is gravelly sandy loam, very gravelly sandy loam, gravelly loam, or very gravelly loam. The content of clay ranges from 10 to 20 percent. The horizon has 15 to 40 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 4 to 8 percent. By sum of cations, base saturation ranges from 25 to 35 percent. By ammonium acetate, CEC ranges from 15 to 20. NaF pH is 9.8 to 11.5. Reaction is moderately acid or slightly acid.

The upper part of the Bt horizon has dry color of 5YR 5/6, 6/4, 6/8, 7/4, or 7/6; 7.5YR 5/4, 5/6, 6/4, 6/6, 7/4, or 7/6; or 10YR 6/4, 7/4, or 7/6. Moist color is 5YR 3/4, 4/4, 4/6, or 5/6; 7.5YR 4/4, 4/6, 5/6, or 5/8; or 10YR 4/3, 4/4, 5/6, or 5/8. Texture is sandy loam, gravelly sandy loam, very gravelly sandy loam, sandy clay loam, gravelly fine sandy loam, fine sandy loam, gravelly sandy clay loam, loam, or gravelly loam. The content of clay ranges from 12 to 25 percent. The content of gravel is 5 to 30 percent, and the content of cobbles is 0 to 20 percent. The content of organic matter is 0.5 to 4 percent. By sum of cations, base saturation ranges from 25 to 40 percent. By ammonium acetate, CEC ranges from 8 to 13. NaF pH is 9.0 to 11.0. Reaction ranges from strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 5YR 5/6, 6/8, or 7/6; 7.5YR 4/6, 7/6, 7/8, or 8/6; or 10YR 5/6, 7/6, or 8/6. Moist color is 5YR 4/4 or 5/8, 7.5YR 5/6 or 6/8, or 10YR 4/4, 5/4, 5/6, 5/8, 6/8, or 7/6. Texture is sandy loam, gravelly sandy loam, very gravelly sandy loam, loam, gravelly loam, very gravelly loam, gravelly fine sandy loam, or fine sandy loam. The content of clay ranges from 5 to 20 percent. The content of gravel is 2 to 40 percent. The content of organic matter is 0.1 to 0.5 percent. By sum of cations, base saturation ranges from 5 to 35 percent. By ammonium acetate, CEC ranges from 6 to 11. NaF pH is 9.0 to 10.0. Reaction ranges from very strongly acid to slightly acid.

Olashes Series

The Olashes series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on alluvial fans and fan terraces. Slopes range from 0 to 5 percent. The mean annual precipitation is 17 inches (432 mm), and the mean annual air temperature is 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs

Typical Pedon

Olashes sandy loam, on a slope of less than 1 percent, in an irrigated prune orchard, at an elevation of 80 feet (24 m). When described on 9/26/1980, the soil was dry to a depth of 2 inches and moist below that depth. (Colors are for dry soil unless otherwise noted.)

Ap—0 to 4 inches (0 to 10 cm); pale brown (10YR 6/3) sandy loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; few very fine irregular pores; slightly acid, pH 6.2; clear smooth boundary.

Bt1—4 to 14 inches (10 to 36 cm); pale brown (10YR 6/3) sandy clay loam, very dark brown (10YR 2/2) moist; weak medium subangular blocky structure; hard, very friable, sticky, plastic; few very fine roots; many very fine tubular pores; 2 percent gravel; many thin clay films in pores and bridging mineral grains; neutral, pH 6.6; clear wavy boundary.

Bt2—14 to 31 inches (36 to 79 cm); light yellowish brown (10YR 6/4) sandy clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; hard, very friable, sticky, plastic; many very fine tubular pores; 5 percent gravel; many moderately thick clay films in pores and common thin clay films on faces of peds; neutral, pH 7.0; clear wavy boundary.

Bt3—31 to 52 inches (79 to 132 cm); light yellowish brown (10YR 6/4) sandy clay loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; hard, very friable, slightly sticky, slightly plastic; few very fine tubular pores; 10 percent gravel; many moderately thick clay films in pores and bridging mineral grains; slightly alkaline, pH 7.5; clear smooth boundary.

2C—52 to 62 inches (132 to 157 cm); yellowish brown (10YR 5/4) sand, brown (10YR 4/3) moist; single grain; loose, nonsticky, nonplastic; many very fine irregular pores; 14 percent gravel; slightly alkaline, pH 7.5.

Type location: Sutter County, California; about 10.0 miles southwest of Pennington on West Butte Road, then 420 feet east into a prune orchard, approximately 1,100 feet north and 1,400 feet west of the southeast corner of sec. 18, T. 16 N., R. 1 E.; 39 degrees, 14 minutes, 7 seconds north latitude and 121 degrees, 53 minutes, 47 seconds west longitude; NAD27; USGS Quad: Meridian, California.

Range in Characteristics

The soils are more than 60 inches (152 cm) deep. The mean annual soil temperature ranges from 62 to 66 degrees F (17 to 19 degrees C). The soil temperature is above 47 degrees F (8 degrees C) the entire year. In nonirrigated areas, the soil between depths of 6 and 15 inches (15 and 38 cm) is dry in all parts from June through October and is moist in some or all parts from November through May. The content of gravel is 0 to 15 percent. Depth to the upper boundary of an argillic horizon is 4 to 12 inches (10 to 30 cm). Some pedons do not have a 2C horizon.

The A horizon has dry color of 10YR 6/3 or 6/2. Moist color is 10YR 4/2, 3/2, 3/3, or 2/2. The content of clay ranges from 15 to 20 percent. Reaction is slightly acid or neutral. The content of organic matter is more than 1 percent in the upper 4 inches (10 cm).

The Bt horizon has dry color of 10YR 6/2, 6/3, 6/4, 5/2, or 5/3. Moist color is 10YR 4/2, 4/3, 4/4, 3/3, 3/4, or 2/2 or 7.5YR 4/2 or 3/2. Texture is sandy clay loam, clay loam, or loam. The content of clay ranges from 20 to 35 percent. There is a 4 to 10 percent (absolute) increase in content of clay between the A horizon and the Bt horizon. Reaction is neutral or slightly alkaline.

Ordferry Series

The Ordferry series consists of moderately deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are on basin rims and in flood basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 18

inches (457 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Xeric Duraquerts

Typical Pedon

Ordferry silty clay, on a slope of 1 percent, under a cover of pasture grasses and dock, at an elevation of 106 feet (32 m). When described on 6/5/1996, the soil was dry to a depth of 29 inches (74 cm). (Colors are for dry soil unless otherwise noted).

A1—0 to 3 inches (0 to 8 cm); light brownish gray (10YR 6/2) silty clay, dark grayish brown (10YR 4/2) moist; 50 percent clay; moderate fine subangular blocky structure parting to moderate fine granular; very hard, firm, moderately sticky, plastic; common very fine and fine roots; few very fine tubular pores; common fine strong brown (7.5YR 4/6) irregular oxidized iron masses and common fine black (N 2/0) irregular manganese masses; 1 percent well rounded gravel; slightly acid, pH 6.3 by Hellige-Truog; abrupt smooth boundary.

A2—3 to 6 inches (8 to 15 cm); light brownish gray (10YR 6/2) silty clay, dark grayish brown (10YR 4/2) moist; 50 percent clay; strong medium prismatic structure parting to moderate fine angular blocky; very hard, very firm, sticky, plastic; common very fine and fine roots; few very fine tubular pores; common fine strong brown (7.5YR 4/6) irregular oxidized iron masses and common fine black (N 2/0) irregular manganese masses; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bss1—6 to 13 inches (15 to 33 cm); light brownish gray (10YR 6/2) silty clay, grayish brown (10YR 5/2) moist; 55 percent clay; strong medium prismatic structure parting to moderate fine angular blocky; very hard, very firm, very sticky, very plastic; common very fine roots; few very fine tubular pores; many fine strong brown (7.5YR 4/6) irregular oxidized iron masses and many fine black (N 2/0) irregular manganese masses; few slickensides; neutral, pH 6.6 by Hellige-Truog; abrupt smooth boundary.

Bss2—13 to 25 inches (33 to 64 cm); light brownish gray (10YR 6/2) silty clay, grayish brown (10YR 5/2) moist; 60 percent clay; weak medium prismatic structure parting to moderate fine angular blocky; very hard, very firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; common fine strong brown (7.5YR 4/6) irregular oxidized iron masses, common fine black (N 2/0) irregular manganese masses, and common fine black (N 2/0) spherical manganese nodules; common slickensides and wedge-shaped aggregates; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

Bk—25 to 29 inches (64 to 74 cm); light yellowish brown (10YR 6/4) silty clay, yellowish brown (10YR 5/4) moist; 45 percent clay; moderate fine subangular blocky structure; hard, firm, sticky, plastic; very few very fine roots; few very fine tubular pores; common fine strong brown (7.5YR 4/6) irregular oxidized iron masses and common fine black (N 2/0) spherical manganese nodules; strongly effervescent on concretions; moderately alkaline, pH 8.3 by Hellige-Truog; abrupt smooth boundary.

2Bkqm1—29 to 33 inches (74 to 84 cm); grayish brown (10YR 5/2), indurated duripan, grayish brown (2.5Y 5/2) moist; silica- and lime-cemented capping 0.25 inch (0.6 cm) thick; strong thin platy structure; very rigid, nonsticky, nonplastic; very few very fine roots between plates and very few very fine roots matted on top of the capping; very few tubular pores; violently effervescent throughout; abrupt smooth boundary.

2Bkqm2—33 to 40 inches (84 to 102 cm); grayish brown (10YR 5/2), strongly cemented to indurated duripan, grayish brown (2.5Y 5/2) moist; strong thin platy structure; very rigid, nonsticky, nonplastic; slightly effervescent throughout.

Type location: Butte County, California; about 5.8 miles southeast of Rancho Llano Seco headquarters, approximately 2,400 feet west and 5,500 feet south of the intersection of Grainland Road and Seven Mile Lane; in an unsectionized area in the Llano Seco Land Grant; 121 degrees, 55 minutes, 0.0 seconds north latitude and 39 degrees, 35 minutes, 37.5 seconds west longitude; NAD83; USGS Quad: Llano Seco, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from May to October 15 (about 165 days). The particle-size control section averages 45 to 55 percent clay. Mineralogy is dominantly smectitic. The soils are calcareous from a depth of 25 to 40 inches (64 to 102 cm). Reversible, surface-initiated cracks 0.5 to 1 inch (1.3 to 2.5 cm) wide extend to a depth of 25 inches (64 cm) from June to October (about 130 days) when the soils are not irrigated. Few or common slickensides occur in the Bss horizon. A fluctuating water table can occur from the top of the duripan to 6 inches (15 cm) below the surface of the soil from December through May. Redoximorphic features, such as manganese nodules, manganese masses, and oxidized iron masses, may occur throughout all horizons. Some pedons have accumulations of carbonate and/or carbonate concretions in chimney areas.

The A horizon has dry color of 10YR 6/2. Moist color is 10YR 4/2. Texture is silty clay or clay. The content of clay ranges from 40 to 50 percent. The content of organic matter is 1 to 2 percent. Reaction is slightly acid or neutral.

The Bss1 horizon has dry color of 10YR 6/2. Moist color is 10YR 5/2, 4/2, 4/3, 3/3, or 3/4. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. The content of organic matter is 0.1 to 1 percent. Reaction is neutral or slightly alkaline.

The Bss2 horizon has dry color of 10YR 6/2 or 6/3. Moist color is 10YR 4/2, 5/2, 4/3, or 3/3. Texture is silty clay or clay. The content of clay ranges from 40 to 60 percent. The content of organic matter is 0.1 to 1 percent. Reaction is slightly alkaline or moderately alkaline.

The Bk horizon has dry color of 10YR 6/2, 6/3, or 6/4. Moist color is 10YR 4/2, 4/3, 5/4, or 5/3. Texture is silty clay or clay loam. The content of clay ranges from 35 to 50 percent. The content of organic matter is 0.1 to 1 percent. Effervescence ranges from violent to slight. Salinity ranges from 0 to 2 mmhos/cm. Reaction is moderately alkaline or strongly alkaline.

The 2Bkqm horizon has dry color of 10YR 6/4 or 5/2. Moist color is 10YR 4/4 or 4/3 or 2.5Y 5/2. Rupture resistance ranges from strongly cemented to indurated with silica and lime.

Oregongulch Series

The Oregongulch series consists of moderately deep, somewhat excessively drained soils that formed in residuum and colluvium derived from trondhjemite. These soils are on ridgetops and side slopes on granitic Sierra Nevada foothills. Slopes range from 2 to 70 percent. The mean annual precipitation is about 48 inches (1,219 mm), and the mean annual air temperature is about 58 degrees F (14 degrees C).

Taxonomic class: Coarse-loamy, mixed, active, thermic Typic Haploxerepts

Typical Pedon

Oregongulch gravelly sandy loam, on a southeast-facing slope of 28 percent, under a cover of whiteleaf manzanita, live oak, Pacific madrone, toyon, Pacific poison oak,

foothill pine, and scattered ponderosa pine, at an elevation of 1,000 feet (305 m). When described on 9/29/1998, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 4 inches (3 to 10 cm); light gray (10YR 7/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; 10 percent clay; weak very fine subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; few very fine roots; many very fine interstitial pores; 30 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bw1—4 to 7 inches (10 to 18 cm); very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 5/3) moist; 12 percent clay; weak fine subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; few very fine to medium roots; many very fine interstitial pores; 20 percent subangular gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.

Bw2—7 to 13 inches (18 to 33 cm); very pale brown (10YR 7/3) gravelly sandy loam, yellowish brown (10YR 5/4) moist; 15 percent clay; moderate fine subangular blocky structure; slightly hard, firm, nonsticky, nonplastic; common medium and coarse roots; common very fine interstitial pores; 25 percent subangular gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

Bw3—13 to 18 inches (33 to 46 cm); very pale brown (10YR 7/3) gravelly sandy loam, yellowish brown (10YR 5/4) moist; 15 percent clay; moderate fine subangular blocky structure; slightly hard, firm, nonsticky, nonplastic; common medium roots; common very fine interstitial pores; 30 percent subangular gravel; moderately acid, pH 5.8 by Hellige-Truog; abrupt smooth boundary.

C—18 to 24 inches (46 to 61 cm); very pale brown (10YR 7/3) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; 13 percent clay; moderate medium subangular blocky structure; slightly hard, firm, nonsticky, nonplastic; common medium roots; common very fine interstitial pores; 40 percent subangular gravel; moderately acid, pH 5.8 by Hellige-Truog; abrupt smooth boundary.

Cdt—24 to 60 inches (61 to 152 cm); weathered, densic trondhjemite bedrock; very pale brown (10YR 8/3) very gravelly loamy coarse sand, very pale brown (10YR 7/3) moist; 5 percent clay; massive, hard, firm, noncemented, nonsticky, nonplastic; common medium and coarse roots in cracks; 20 percent discontinuous prominent yellowish red (5YR 5/6 moist) clay films on rocks; after crushing, 50 percent hard subangular gravel; moderately acid, pH 5.8 by Hellige-Truog.

Type location: Butte County, California; about 3.7 miles northwest of Forbestown, approximately 1,900 feet west and 750 feet south of the northeast corner of sec. 6, T. 19 N., R. 6 E.; 39 degrees, 32 minutes, 22 seconds north latitude and 121 degrees, 20 minutes, 21 seconds west longitude; NAD83; USGS Quad: Forbestown, California.

Range in Characteristics

The depth to densic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The particle-size control section averages 12 to 18 percent clay and 20 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. The content of organic matter is 1 to 2.5 percent to a depth of 4 inches (10 cm) and is less than 1 percent from 4 to 24 inches (10 to 61 cm). Rock fragments on the surface range from 5 to 40 percent gravel.

The A horizon has dry color of 10YR 5/2, 6/2, or 7/2. Moist color is 10YR 3/2, 4/2, or 4/3. Texture is gravelly sandy loam, gravelly coarse sandy loam, sandy loam, or coarse sandy loam. The content of clay ranges from 5 to 12 percent. The content of gravel is 0 to 30 percent. Reaction is slightly acid or neutral.

The Bw horizon has dry color of 10YR 6/2, 7/2, 7/3, 8/2, or 8/3. Moist color is 10YR 3/3, 4/3, 5/3, 5/4, 6/4, or 7/3. Texture is gravelly sandy loam, gravelly coarse sandy loam, coarse sandy loam, or loamy coarse sand. The content of clay ranges from 3 to 15 percent. The content of gravel is 10 to 30 percent. Reaction ranges from strongly acid to slightly acid.

The C horizon has dry color of 10YR 7/3, 8/2, or 8/3. Moist color is 10YR 5/4 or 6/2. Texture is very gravelly sandy loam or gravelly loamy coarse sand. The content of clay ranges from 3 to 13 percent. The content of gravel is 20 to 50 percent. Reaction is moderately acid or slightly acid.

The Cdt horizon has variegated dry color of 10YR 6/3, 7/3, 8/2, or 8/3; 7.5YR 6/6; or 5YR 6/6. It has variegated moist color 10YR 5/4, 6/2, 6/4, or 7/3; 7.5YR 5/6; or 5YR 4/6. After crushing, texture is gravelly sandy clay loam, loamy coarse sand, gravelly loamy coarse sand, very gravelly loamy coarse sand, very gravelly coarse sand, or gravelly coarse sand. The content of clay ranges from 1 to 22 percent. The content of gravel is 10 to 50 percent. Reaction ranges from strongly acid to slightly acid.

Oroshore Series

The Oroshore series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from metasedimentary and metavolcanic rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada foothills. Slopes range from 3 to 70 percent. The mean annual precipitation is about 38 inches (965 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs

Typical Pedon

Oroshore gravelly loam, on a south-southwest-facing slope of 17 percent, under a cover of annual grasses and forbs and scattered blue oaks, at an elevation of 750 feet (229 m). When described on 6/6/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); pink (7.5YR 7/4) gravelly loam, brown (7.5YR 5/4) moist; 27 percent clay; moderate coarse subangular blocky structure parting to strong fine granular; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots; many very fine to medium and common coarse tubular and irregular pores; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt1—2 to 15 inches (5 to 38 cm); pink (7.5YR 8/4) gravelly clay loam, brown (7.5YR 5/4) moist; 30 percent clay; moderate medium and coarse subangular blocky structure; slightly hard, very friable, moderately sticky, moderately plastic; common very fine and fine and few medium roots; many very fine to coarse tubular pores; 70 percent continuous distinct clay films; 10 percent cobbles and 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt2—15 to 28 inches (38 to 71 cm); pink (5YR 8/4) very cobbly clay loam, reddish yellow (5YR 6/6) moist; 33 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, moderately sticky, moderately plastic; common very fine roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 20 percent cobbles and 20 percent gravel; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.

Bt3—28 to 34 inches (71 to 86 cm); reddish yellow (5YR 7/6) extremely gravelly clay loam, yellowish red (5YR 5/6) moist; 37 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine roots; common very fine and fine tubular pores; 80 percent

continuous prominent clay films; 20 percent cobbles and 50 percent gravel; neutral, pH 6.9 by Hellige-Truog; clear smooth boundary.

Crt—34 inches (86 cm); weakly cemented metavolcanic bedrock; few very fine roots; few very fine and fine tubular pores; 20 percent continuous prominent clay films; slightly alkaline, pH 7.8 by Hellige-Truog.

Type location: Butte County, California; about 0.5 mile southwest of Lime Saddle Boat Ramp, approximately 1,000 feet north and 1,900 feet west of the southeast corner of sec. 18, T. 21 N., R. 4 E.; 39 degrees, 40 minutes, 17 seconds north latitude and 121 degrees, 34 minutes, 4 seconds west longitude; NAD83; USGS Quad: Cherokee, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 66 degrees F (15 to 19 degrees C). The particle-size control section averages 27 to 35 percent clay and 35 to 80 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 5 to 30 percent gravel, 0 to 25 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 7.5YR 6/3, 6/4, 7/3, or 7/4 or 10YR 6/4, 7/3, or 7/4. Moist color is 7.5YR 4/2, 4/3, 4/4, or 5/4 or 10YR 4/3. Texture is loam, gravelly loam, or very gravelly loam. The content of clay ranges from 20 to 27 percent. The horizon has 10 to 45 percent gravel and 0 to 10 percent cobbles. Reaction ranges from neutral to moderately acid.

The Bt horizon has dry color of 7.5YR 6/4, 7/4, or 8/4; 5YR 6/4, 7/4, 7/6, or 8/4; or 10YR 6/4, 7/4, or 8/4. Moist color is 7.5YR 4/4, 5/4, 5/6, or 6/6; 5YR 4/4, 4/6, 5/4, 5/6, 6/6, 5/8, or 6/8; or 10YR 4/4, 5/4, 5/6, or 5/8. Texture is gravelly clay loam, very gravelly clay loam, extremely gravelly clay loam, very cobbly clay loam, or extremely cobbly clay loam. The content of clay ranges from 27 to 39 percent. The horizon has 15 to 65 percent gravel, 0 to 40 percent cobbles, and 0 to 20 percent stones. Reaction ranges from neutral to moderately acid.

Oroville Series

The Oroville series consists of moderately deep, poorly drained soils that formed in alluvium derived from metamorphic and igneous rocks. These soils are in swales on intermediate terraces. Slopes range from 0 to 9 percent. The mean annual precipitation is about 24 inches (610 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, active, thermic Aquic Durixeralfs

Typical Pedon

Oroville gravelly fine sandy loam, on a southeast-facing slope of 3 percent, under a cover of annual grasses and forbs, at an elevation of 280 feet (85 m). When described on 9/26/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/4) gravelly fine sandy loam, dark brown (7.5YR 3/3) moist; 18 percent clay; strong thick platy structure parting to moderate fine subangular blocky; slightly hard, friable, nonsticky, nonplastic; many very fine roots; few very fine tubular and common very fine irregular pores; 20 percent well rounded mixed gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

BAt—2 to 6 inches (5 to 15 cm); yellowish red (5YR 4/6) gravelly sandy loam, dark reddish brown (5YR 3/4) moist; 20 percent clay; strong medium platy structure parting to moderate fine subangular blocky; very hard, friable, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine tubular pores; 5 percent discontinuous distinct clay films on vertical faces of peds; 20 percent well rounded mixed gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt1—6 to 13 inches (15 to 33 cm); red (2.5YR 4/6) gravelly clay loam, dark red (2.5YR 3/6) moist; 28 percent clay; strong medium subangular blocky structure; very hard, firm, slightly sticky, moderately plastic; few fine and common very fine roots; common very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds; 20 percent well rounded mixed gravel; slightly acid, pH 6.3 by Hellige-Truog; abrupt wavy boundary.

2Bt2—13 to 17 inches (33 to 43 cm); reddish brown (2.5YR 4/4) gravelly clay, dark red (2.5YR 3/6) moist; 50 percent clay; strong fine prismatic structure parting to moderate fine angular blocky; extremely hard, very firm, very sticky, very plastic; few very fine roots; many very fine tubular pores; 5 percent slickensides and 50 percent continuous prominent clay films on faces of peds; 20 percent well rounded mixed gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.

2Btg—17 to 23 inches (43 to 58 cm); brown (10YR 5/3) gravelly sandy clay, brown (10YR 4/3) moist; 50 percent clay; weak fine angular blocky structure; extremely hard, very firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; 50 percent continuous prominent clay films on faces of peds; 40 percent fine irregular manganese masses; 15 percent fine distinct olive gray (5Y 5/2) iron depletions lining pores; 30 percent well rounded mixed gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt wavy boundary.

3Bqm1—23 to 31 inches (58 to 79 cm); extremely gravelly, indurated duripan; very rigid, cemented by silica, nonsticky, nonplastic; 2 percent well rounded mixed cobbles and 75 percent well rounded mixed gravel; clear wavy boundary.

3Bqm2—31 to 60 inches (79 to 152 cm); extremely gravelly, strongly cemented duripan; rigid, cemented by silica, nonsticky, nonplastic; 2 percent well rounded mixed cobbles and 75 percent well rounded mixed gravel.

Type location: Butte County, California; about 0.5 mile north of downtown Oroville, in the Fernandez Land Grant, approximately 3,200 feet west and 1,100 feet south of the northeast corner of projected sec. 8, T. 19 N., R. 4 E.; 39 degrees, 31 minutes, 20 seconds north latitude and 121 degrees, 33 minutes, 5 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

Depth to the extremely gravelly, indurated duripan ranges from 20 to 40 inches (51 to 102 cm), and depth to the 2Bt horizon ranges from 6 to 27 inches (15 to 69 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 35 to 50 percent clay and 2 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur from the top of the duripan to the surface of the soil from December through April. Rock fragments on the surface range from 5 to 20 percent gravel.

The A horizon has dry color of 7.5YR 5/3, 5/4, 6/3, 6/4, or 7/3 or 5YR 3/4. Moist color is 7.5YR 3/3, 3/4, 4/3, or 4/4; 5YR 3/4 or 4/4; or 2.5YR 3/4. Texture is gravelly sandy loam, fine sandy loam, sandy loam, or loam. The content of clay ranges from 15 to 24 percent. The content of gravel is 5 to 20 percent. The content of organic matter is 0.5 to 2 percent. Redoximorphic features range from 0 to 10 percent soft oxidized iron masses and 0 to 20 percent iron depletions. Reaction is moderately acid or slightly acid.

The BAt horizon has dry color of 7.5YR 5/4, 6/3, or 6/4 or 5YR 4/4, 4/6, or 5/3. Moist color is 7.5YR 4/3 or 4/4, 5YR 3/4 or 4/4, or 2.5YR 3/4. Texture is gravelly sandy

loam, gravelly fine sandy loam, gravelly loam, loam, or sandy loam. The content of clay ranges from 18 to 25 percent. The content of gravel is 3 to 20 percent. The content of organic matter is 0.2 to 0.8 percent. Redoximorphic features range from 0 to 30 percent soft oxidized iron masses, 0 to 15 percent iron depletions, and 0 to 5 percent soft manganese masses. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 7.5YR 5/4, 6/4, or 7/4; 5YR 5/4 or 5/6; or 2.5YR 4/6. Moist color is 7.5YR 4/3 or 4/4; 5YR 3/4, 4/4, 4/6, or 4/8; or 2.5YR 3/6. Texture is gravelly clay loam, gravelly sandy clay loam, very gravelly sandy clay loam, sandy clay loam, or clay loam. The content of clay ranges from 22 to 35 percent. The content of gravel is 5 to 40 percent. The content of organic matter is 0.1 to 0.5 percent. Redoximorphic features range from 0 to 2 percent soft oxidized iron masses and 0 to 15 percent soft manganese masses. Reaction ranges from moderately acid to neutral.

The 2Bt horizon has dry color of 10YR 5/3 or 5/4; 7.5YR 5/4 or 7/4; 5YR 4/4, 4/6, 5/4, or 5/6; or 2.5YR 4/4. Moist color is 10YR 4/3 or 4/4; 7.5YR 4/3 or 4/4; 5YR 3/3, 3/4, 4/4, or 4/6; or 2.5YR 3/6. Texture is gravelly clay, gravelly sandy clay, sandy clay, or clay. The content of clay ranges from 45 to 52 percent. The horizon has 5 to 45 percent gravel and 0 to 2 percent cobbles. The content of organic matter is 0 to 0.3 percent. Redoximorphic features range from 0 to 20 percent iron depletions and 0 to 40 percent soft manganese masses. Reaction ranges from moderately acid to neutral.

The 2Btg horizon has dry color of 10YR 5/3 or 5/4; 5YR 4/4, 4/6, 5/6, or 6/4; or 7.5YR 5/4 or 7/4. Moist color is 10YR 4/3 or 4/4; 5YR 3/3, 4/4, 4/6, or 5/4; or 7.5YR 4/4. Texture is gravelly sandy clay, gravelly clay, sandy clay, or clay. The content of clay ranges from 45 to 55 percent. The content of organic matter is 0 to 0.3 percent. Redoximorphic features include iron depletions and manganese masses. Reaction is slightly acid or neutral.

The 3Bq horizon, where it occurs, has dry color of 7.5YR 6/4 or 6/6. Moist color is 7.5YR 4/4, 4/6, 5/4, or 5/6. Texture is very gravelly sandy loam, sandy clay loam, or sandy loam. The content of clay ranges from 12 to 28 percent. The content of gravel is 0 to 40 percent. Redoximorphic features range from 0 to 20 percent soft manganese masses. Reaction is slightly acid or neutral.

The 3Bqm horizon is indurated to moderately cemented with silica. A silica and manganese capping $^{1}/_{16}$ to $^{3}/_{8}$ inch thick occurs in some pedons. Manganese coatings occur on top of the duripan. The horizon has 15 to 80 percent well rounded gravel and 0 to 5 percent cobbles.

Oxyaquic Xerofluvents

Oxyaquic Xerofluvents consist of very deep, somewhat poorly drained soils that formed in alluvium derived from placer mining outwash from the Cherokee Gold Mine. These soils are on flood plains within levees, on basin floors, and in sediment basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents

Reference Pedon

Oxyaquic Xerofluvents, thermic, on a slope of 0 percent, under a cover of rice, at an elevation of 120 feet (37 m). When described on 5/21/1992, the soil was moist below a depth of 4 inches (10 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 6 inches (0 to 15 cm); light gray (N 7/0) very fine sandy loam, dark gray (10YR 4/1) moist; 18 percent clay; massive; hard, friable, slightly sticky, moderately plastic; common very fine roots; few very fine tubular pores; many

medium strong brown (7.5YR 4/6) oxidized iron masses, yellowish red (5YR 4/6) moist; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

C1—6 to 20 inches (15 to 51 cm); pinkish gray (7.5YR 7/2) silt loam, gray (5YR 5/1) moist; 25 percent clay; massive; hard, friable, slightly sticky, moderately plastic; common very fine roots; few very fine tubular pores; many medium reddish yellow (7.5YR 7/6) oxidized iron masses, dark gray (5YR 4/1) moist; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

C2—20 to 30 inches (51 to 76 cm); yellow (10YR 7/6) silt loam, strong brown (7.5YR 7/4) moist; 25 percent clay; strong thin platy structure; hard, friable, slightly sticky, moderately plastic; few very fine roots; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

C3—30 to 43 inches (76 to 109 cm); pink (7.5YR 7/6), stratified silt loam to loamy fine sand, strong brown (7.5YR 5/6) moist; 10 percent clay; massive parting to strong thin platy structure; hard, friable, slightly sticky, slightly plastic; many medium reddish yellow (7.5YR 6/8) oxidized iron masses and common fine black (N 2/0) manganese masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

C4—43 to 55 inches (109 to 140 cm); reddish yellow (7.5YR 7/6) silt loam, yellowish brown (10YR 5/8) moist; 20 percent clay; strong thin platy structure; hard, friable, moderately sticky, moderately plastic; common fine black (N 2/0) manganese masses and many medium strong brown (7.5YR 5/6) oxidized iron masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

C5—55 to 72 inches (140 to 183 cm); very pale brown (10YR 8/3), stratified loamy fine sand to silt loam, brownish yellow (10YR 6/6) moist; 20 percent clay; massive parting to strong thick platy structure; slightly hard, very friable, slightly sticky, slightly plastic; many medium yellowish red (5YR 5/8) and strong brown (7.5YR 5/6) oxidized iron masses and common fine black (N 2/0) manganese masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

2Ab—72 to 74 inches (183 to 188 cm); grayish brown (10YR 5/2) clay, very dark gray (10YR 3/1) moist; 50 percent clay; moderate medium granular structure; very hard, firm, very sticky, very plastic; slightly alkaline, pH 7.5 by Hellige-Truog.

The reference pedon is an example of the soils within this category. The properties represented in map units 338, 339, 439, 440, and 441 vary. The particle-size classes represented by this description include coarse-loamy, fine-loamy, and fine.

Type location: Butte County, California; about 2.5 miles northeast of Richvale, approximately 2,000 feet south and 100 feet east of the center of sec. 2, T. 19 N., R. 2 E.; 39 degrees, 31 minutes, 30 seconds north latitude and 121 degrees, 42 minutes, 55 seconds west longitude; NAD27; USGS Quad: Shippee, California.

Range in Characteristics

Depth to a buried horizon of clay ranges from 24 to 72 inches (61 to 183 cm) or more. The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about June to October (about 125 days). The particle-size control section is coarse-loamy, fine-loamy, fine, or coarse-loamy over clayey. Mineralogy is mixed. A fluctuating water table can occur at a depth of 18 to 72 inches (46 to 183 cm) from December through April. Redoximorphic features, such as oxidized iron masses and manganese masses, can occur in all horizons. Some pedons have a duripan, which is at a depth of 38 to 60 inches (96 to 152 cm) or more.

The Ap horizon has dry color of N 7/0 or 10YR 5/2, 5/3, 5/4, 6/3, 6/4, 7/2, 7/3, or 7/4. Moist color is 10YR 3/1, 3/2, 3/3, 4/1, 4/2, 4/3, 5/2, 5/3, 5/4, or 6/3; 2.5Y 4/2, 4/3, or 5/2; or 5Y 4/1. Texture typically is very fine sandy loam or silt loam, but the range includes sand, loamy sand, sandy loam, silty clay loam, clay loam, clay, and silty clay.

The content of clay ranges from 5 to 60 percent. Reaction ranges from moderately acid to moderately alkaline.

The C horizon has dry color of 2.5Y 6/6 or 7/3; 10YR 4/3, 5/3, 5/4, 6/2, 6/4, 7/2, 7/3, 7/6, 8/2, 8/3, 8/4, or 8/6; or 7.5YR 5/4, 5/6, 6/6, 7/2, 7/4, 7/6, or 7/8. Moist color is 5Y 4/1 or 6/1; 2.5Y 4/2, 5/2, or 5/6; 10YR 3/2, 3/3, 4/1, 4/2, 4/3, 5/3, 5/6, 5/8, 6/4, 6/6, or 7/4; or 7.5YR 4/4, 5/4, 5/6, 5/8, 6/4, or 6/6. Texture is loamy fine sand, silt loam, fine sand, loamy sand, sand, fine sandy loam, loam, silty clay loam, silty clay, or clay or is stratified very fine sandy loam to silt loam, loam to silty clay loam, or silt loam to fine sand. The content of clay ranges from 5 to 60 percent. The content of gravel is 0 to 25 percent. Reaction ranges from neutral to moderately alkaline.

The 2Ab or Bssb horizon has dry color of 10YR 4/1, 5/2, or 6/2. Moist color is 10YR 3/1 or 4/1, N 2/0, or 5Y 4/1. Texture is clay or silty clay. The content of clay ranges from 40 to 80 percent. Effervescence ranges from slight to violent. Reaction is slightly alkaline or moderately alkaline.

Palexerults

Palexerults consist of very deep, well drained soils that formed in colluvium over residuum derived from volcanic rocks over Eocene sediments. These soils are on side slopes on Sierra Nevada foothills. Slopes range from 2 to 50 percent. The mean annual precipitation is about 29 inches (737 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Kaolinitic, superactive, thermic Typic Palexerults

Typical Pedon

Palexerults gravelly loam, on a north-facing slope of 20 percent, under a cover of blue oak, interior live oak, manzanita, toyon, poison oak, and annual grasses and forbs, at an elevation of 760 feet (232 m). When described on 5/21/2001, the soil was dry to a depth of 12 inches (31 cm) and slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); pale brown (10YR 6/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; 20 percent clay; moderate fine and medium subangular blocky structure; very hard, firm, moderately sticky, slightly plastic; many fine and medium roots throughout; many fine irregular pores; 5 percent rounded mixed cobbles and 10 percent rounded mixed gravel; neutral, pH 7.0 by Hellige-Truog; clear wavy boundary.

Bt1—2 to 12 inches (5 to 31 cm); pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; 26 percent clay; moderate medium subangular blocky structure; very hard, firm, moderately sticky, moderately plastic; many fine and medium roots between peds; common fine and medium tubular pores; 35 discontinuous distinct clay films on faces of peds; 5 percent rounded mixed cobbles and 25 percent rounded mixed gravel; slightly acid, pH by Hellige-Truog; abrupt wavy boundary.

Bt2—12 to 20 inches (31 to 51 cm); 60 percent reddish yellow (7.5YR 6/6), 30 percent light brown (7.5YR 6/3), and 10 percent pink (7.5YR 7/4) clay loam, 60 percent brown (7.5 4/4), 30 percent brown (10YR 5/3), and 10 percent yellowish brown (10YR 5/6) moist; 34 percent clay; moderate medium angular blocky structure; very hard, very firm, moderately sticky, moderately plastic; common fine to coarse roots between peds; common fine tubular pores; 55 percent discontinuous distinct clay films on faces of peds; 10 percent well rounded quartz gravel; very strongly acid, pH 4.8 by Hellige-Truog; clear smooth boundary.

2Bt3—20 to 29 inches (51 to 74 cm); 65 percent reddish yellow (5YR 6/6) and 35 percent pink (7.5YR 8/4) silty clay, 65 percent reddish brown (5YR 4/4) and 35 percent strong brown (7.5YR 5/6) moist; 50 percent clay; moderate medium

angular blocky structure; very hard, very firm, moderately sticky, very plastic; common fine and medium roots between peds and few coarse roots in cracks; common fine vesicular pores; 70 percent discontinuous distinct clay films on faces of peds; 5 percent well rounded quartz gravel; very strongly acid, pH 4.5 by Hellige-Truog; clear wavy boundary.

2BCt—29 to 46 inches (74 to 117 cm); 70 percent reddish yellow (5YR 6/6) and 30 percent pink (7.5YR 8/4) silty clay, 70 percent reddish brown (5YR 4/4) and 30 percent brown (7.5YR 5/4) moist; 55 percent clay; moderate medium and coarse angular blocky structure; very hard, very firm, moderately sticky, very plastic; many fine and medium and few coarse roots in cracks; common fine vesicular pores; 75 percent continuous distinct clay films on faces of peds; 3 percent well rounded quartz gravel; very strongly acid, pH 4.5 by Hellige-Truog; clear smooth boundary.

2C—46 to 65 inches (117 to 165 cm); 70 percent reddish yellow (5YR 6/6) and 30 percent reddish yellow (7.5YR 7/6) silty clay, 70 percent reddish brown (5YR 4/4) and 30 percent light brown (7.5YR 6/4) moist; 50 percent clay; moderate medium angular blocky structure; very hard, very firm, moderately sticky, very plastic; few fine and coarse roots in cracks; few fine vesicular pores; 2 percent well rounded quartz gravel; extremely acid, pH 4.3 by Hellige-Truog; clear wavy boundary.

2Cd—65 inches (165 cm); densic claystone; noncemented.

Type location: Butte County, California; about 3.4 miles north of Oroville, approximately 1,550 feet east and 1,150 feet south of the northwest corner of sec. 29, T. 20 N., R. 4 E.; 39 degrees, 33 minutes, 56 seconds north latitude and 121 degrees, 33 minutes 8 seconds west longitude; NAD27; USGS Quad: Oroville, California.

Range in Characteristics

The depth to densic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 26 to 40 percent clay and 3 to 25 percent rock fragments, mostly gravel. Mineralogy is kaolinitic. Rock fragments on the surface range from 0 to 20 percent gravel, 0 to 10 percent cobbles, 0 to 5 percent stones, and 0 to 3 percent boulders. Mixed colors are common and are inherited from the parent material.

The A horizon has dry color of 10YR 4/2, 4/3, 5/2, 5/3, or 6/3 or 7.5YR 4/3 or 6/3. Moist color is 10YR 3/2, 3/3, or 4/3 or 7.5YR 3/3 or 5/4. Texture is loam, gravelly loam, or silt loam. The content of clay ranges from 16 to 24 percent. The horizon has 0 to 20 percent gravel and 0 to 10 percent cobbles. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 10YR 4/3, 4/4, 6/3, or 6/4 or 7.5YR 6/3, 5/4, 6/6, or 7/4. Moist color is 10YR 3/4, 4/3, 5/3, 5/4, or 5/6; 7.5YR 4/3, 4/4, or 5/6; or 5YR 4/4. Texture is loam, gravelly loam, silt loam, silty clay loam, sandy clay loam, gravelly sandy clay loam, clay loam, or gravelly clay loam. The content of clay ranges from 20 to 35 percent. The horizon has 0 to 30 percent gravel and 0 to 5 percent cobbles. Reaction ranges from very strongly acid to slightly acid.

The 2Bt horizon has dry color of 10YR 5/3 or 6/4; 7.5YR 4/3, 5/4, 6/6, 7/6, or 8/4; or 5YR 6/6. Moist color is 10YR 4/4 or 5/4; 7.5YR 4/4, 5/3, 5/4, 4/6, 5/6, or 6/6; or 5YR 3/4, 4/4, or 5/4. Texture is clay, gravelly clay, silty clay loam, silty clay, or gravelly silty clay. The content of clay ranges from 35 to 60 percent. The content of gravel is 0 to 30 percent. Reaction ranges from extremely acid to strongly acid.

The 2BCt horizon has dry color of 10YR 5/4, 5/6, or 6/4; 7.5YR 8/4; or 5YR 6/6. Moist color is 10YR 5/4, 6/4, or 6/6; 7.5YR 5/3; or 5YR 4/4 or 5/4. Texture is clay, silty clay, gravelly silty clay, clay loam, or sandy clay loam. The content of clay ranges from 30 to 60 percent. The content of gravel is 0 to 30 percent. Reaction ranges from extremely acid to strongly acid.

The 2C horizon has dry color of 10YR 7/2, 7.5YR 5/4 or 7/6, 5YR 6/6, or 2.5Y 6/4. Moist color is 10YR 6/2, 6/4, or 5/6; 7.5YR 4/4 or 5/6; 5YR 4/4 or 6/4; or 2.5Y 6/3. Texture is clay or silty clay. The content of clay ranges from 40 to 60 percent. The content of gravel is 0 to 5 percent. Reaction ranges from extremely acid to strongly acid.

Paradiso Series

The Paradiso series consists of very deep, well drained soils that formed in weathered tephra over residuum derived from volcanic rocks. These soils are on the top of volcanic ridges in the Cascade Mountains. Slopes range from 2 to 30 percent. The mean annual precipitation is about 55 inches (1,397 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Fine, mixed, semiactive, mesic Andic Haploxeralfs

Typical Pedon

Paradiso loam, on a south-facing slope of 5 percent, under a cover of ponderosa pine and black oak, at an elevation of 2,125 feet (648 m). When described on 7/1/1996, the soil was very slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); needles, leaves, and twigs.

A—2 to 4 inches (5 to 10 cm); brown (7.5YR 4/4) loam, dark reddish brown (5YR 3/3) moist; 25 percent clay; strong fine and medium granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine to medium irregular and tubular pores; noneffervescent; 5 percent gravel; slightly acid, pH 5.8 by pH meter 1:1 water; NaF pH 10.0; clear smooth boundary.

ABt—4 to 9 inches (10 to 23 cm); reddish brown (5YR 5/4) clay loam, reddish brown (5YR 4/3) moist; 33 percent clay; strong fine and medium granular structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine and fine and common medium roots; many very fine to medium tubular pores; common distinct continuous clay films on faces of peds and in pores and common distinct discontinuous clay bridges between sand grains; noneffervescent; 5 percent gravel; slightly acid, pH 5.9 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.

Bt1—9 to 16 inches (23 to 41 cm); reddish brown (2.5YR 5/4) clay loam, dark reddish brown (2.5YR 3/4) moist; 36 percent clay; weak medium subangular blocky structure parting to moderate fine granular; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium roots; many very fine to medium tubular pores; common distinct continuous clay films on faces of peds and in pores; noneffervescent; 5 percent gravel; slightly acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.5; gradual smooth boundary.

Bt2—16 to 25 inches (41 to 64 cm); reddish brown (2.5YR 5/4) clay loam, dark reddish brown (2.5YR 3/4) moist; 39 percent clay; weak fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium roots; many very fine to medium tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 3 percent gravel; slightly acid, pH 5.5 by pH meter 1:1 water; NaF pH 10.5; gradual smooth boundary.

Bt3—25 to 45 inches (64 to 114 cm); reddish yellow (5YR 6/6) clay, reddish brown (5YR 4/4) moist; 50 percent clay; strong medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 2 percent gravel;

slightly acid, pH 6.2 by pH meter 1:1 water; NaF pH 10.3; gradual smooth boundary.

Bt4—45 to 58 inches (114 to 147 cm); reddish yellow (7.5YR 6/6) clay loam, reddish brown (5YR 4/4) moist; 33 percent clay; strong fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine roots; common very fine and fine tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 1 percent gravel; slightly acid, pH 6.5 by pH meter 1:1 water; NaF pH 10.5; gradual smooth boundary.

Bt5—58 to 74 inches (147 to 188 cm); light brown (7.5YR 6/4) clay loam, brown (7.5YR 4/4) moist; 28 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and few fine tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 1 percent gravel; moderately acid, pH 6.6 by pH meter 1:1 water; NaF pH 10.5; gradual smooth boundary.

2Bt6—74 to 84 inches (188 to 213 cm); light yellowish brown (10YR 6/4) loam, strong brown (7.5YR 4/6) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and few fine tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 5 percent gravel; slightly acid, pH 6.5 by pH meter 1:1 water.

Type location: Butte County, California; about 0.6 mile north of the intersection of Clark Road and Wagstaff Road, approximately 300 feet north and 2,000 feet east of the southwest corner of sec. 1, T. 22 N., R. 3 E.; 39 degrees, 47 minutes, 13.6 seconds north latitude and 121 degrees, 35 minutes, 24.2 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 55 to 59 degrees F (13 to 15 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 35 to 50 percent clay and 0 to 15 percent rock fragments, mostly gravel. Mineralogy is mixed. Acid oxalate extractable Al plus ½ Fe is 1 or more to a depth of 7 inches (18 cm) below the mineral surface. Rock fragments on the surface range from 0 to 15 percent gravel, 0 to 5 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders. Some pedons have clay textures in the lower part of the Bt horizon.

The A horizon has dry color of 7.5YR 4/4 or 5/4 or 5YR 5/4 or 6/4. Moist color is 5YR 3/3 or 4/3. Texture is loam. The content of clay ranges from 17 to 27 percent. The content of gravel is 0 to 15 percent. By sum of cations, base saturation ranges from 30 to 40 percent. NaF pH is 9.3 to 10.5. Reaction ranges from moderately acid to neutral.

The ABt horizon has dry color of 5YR 5/4, 5/6, or 6/4. Moist color is 5YR 3/3 or 4/3 or 2.5YR 3/4. Texture is loam or clay loam. The content of clay ranges from 24 to 35 percent. The content of gravel is 0 to 5 percent. By sum of cations, base saturation ranges from 25 to 40 percent. NaF pH is 9.8 to 10.5. Reaction ranges from moderately acid to neutral.

The upper part of the Bt horizon has dry color of 5YR 5/4, 6/4, 5/6, or 6/6 or 2.5YR 5/4 or 6/6. Moist color is 2.5YR 3/4 or 4/6 or 5YR 4/4. Texture is loam, clay loam, or silty clay loam. The content of clay ranges from 25 to 40 percent. The content of gravel is 0 to 5 percent. By sum of cations, base saturation ranges from 25 to 40 percent. NaF pH is 9.5 to 10.5. Reaction ranges from moderately acid to neutral.

The middle part of the Bt horizon has dry color of 5YR 5/6 or 6/6 or 2.5YR 5/4. Moist color is 2.5YR 3/4, 4/4, or 4/6 or 5YR 4/4. Texture is clay loam, silty clay loam, clay, or silty clay. The content of clay ranges from 35 to 55 percent. The content of gravel is 0 to 5 percent. By sum of cations, base saturation ranges from 25 to 45 percent. NaF pH is 9.5 to 10.5. Reaction ranges from strongly acid to neutral.

The lower part of the Bt horizon has dry color of 7.5YR 5/4, 6/4, or 6/6 or 5YR 5/4, 5/6, or 6/6. Moist color is 5YR 4/4 or 4/6 or 7.5YR 4/4. Texture is loam, gravelly loam, or clay loam. The content of clay ranges from 17 to 35 percent. The content of gravel is 0 to 25 percent, and the content of cobbles is 0 to 10 percent. By sum of cations, base saturation ranges from 35 to 50 percent. NaF pH is 9.2 to 10.5. Reaction ranges from very strongly acid to neutral.

The 2Bt horizon has dry color of 10YR 6/4, 6/6, or 7/6 or 7.5YR 6/4. Moist color is 7.5YR 4/4, 4/6, or 5/6 or 10YR 4/4 or 5/6. Texture is loam or gravelly loam. The content of clay ranges from 17 to 27 percent. The content of gravel is 0 to 35 percent, and the content of cobbles is 0 to 15 percent. By sum of cations, base saturation ranges from 35 to 50 percent. NaF pH is 9.2 to 10.5. Reaction ranges from very strongly acid to slightly acid.

Parkshill Series

The Parkshill series consists of very deep, well drained soils that formed in residuum and colluvium derived from mixed intrusive igneous rocks, mainly quartz diorite and gabbro. These soils are on side slopes on plutons on Sierra Nevada foothills. Slopes range from 2 to 15 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Ultic Palexeralfs

Typical Pedon

Parkshill coarse sandy loam, on an east-facing slope of 8 percent, under a cover of annual grasses, forbs, interior live oak, blue oak, and Pacific poison oak, at an elevation of 900 feet (274 m). When described on 8/20/2000, the soil was slightly moist from 0 to 26 inches (0 to 66 cm) and moist from 26 to 61 inches (66 cm to 155 cm). (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches (0 to 5 cm); brown (10YR 5/3) coarse sandy loam, dark brown (7.5YR 3/4) moist; 14 percent clay; moderate very fine and fine granular structure; soft, very friable, nonsticky, nonplastic; many very fine roots; many very fine and fine tubular pores; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

A2—2 to 8 inches (5 to 20 cm); brown (10YR 5/3) coarse sandy loam, dark brown (7.5YR 3/4) moist; 15 percent clay; moderate very fine and fine granular structure; soft, very friable, nonsticky, nonplastic; many very fine roots; many very fine and fine tubular pores; 3 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bw—8 to 18 inches (20 to 46 cm); yellowish brown (10YR 5/4) coarse sandy loam, dark brown (7.5YR 3/4) moist; 17 percent clay; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine, few medium, and many very fine roots; many very fine and fine tubular pores; 3 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt1—18 to 26 inches (46 to 66 cm); brown (7.5YR 5/3) coarse sandy loam, dark brown (7.5YR 3/3) moist; 19 percent clay; moderate very fine and fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common fine and many very fine roots; many very fine and fine tubular pores; 30 percent patchy

faint clay films on faces of peds; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

Bt2—26 to 35 inches (66 to 89 cm); strong brown (7.5YR 5/6) sandy clay loam, strong brown (7.5YR 4/6) moist; 23 percent clay; strong fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine and many very fine roots; many very fine and fine and few medium tubular pores; 50 percent patchy distinct clay films on faces of peds; moderately acid, pH 6.1 by Hellige-Truog; clear wavy boundary.

Bt3—35 to 53 inches (89 to 135 cm); strong brown (7.5YR 5/6) sandy clay loam, strong brown (7.5YR 4/6) moist; 25 percent clay; strong fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common fine and very fine roots; many very fine and fine tubular pores; 60 percent patchy distinct clay films on faces of peds; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

BCt—53 to 61 inches (135 to 155 cm); reddish yellow (7.5YR 6/6) sandy clay loam, strong brown (7.5YR 4/6) moist; 23 percent clay; weak very fine and fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine and fine tubular pores; 40 percent faint clay films on faces of peds; moderately acid, pH 5.9 by Hellige-Truog.

Type location: Butte County, California; about 4.1 miles northeast of Bangor, approximately 50 feet south and 2,250 feet east of the northwest corner of sec. 24, T. 18 N., R. 5 E.; 39 degrees, 24 minutes, 32 seconds north latitude and 121 degrees, 21 minutes, 46 seconds west longitude; NAD83; USGS Quad: Rackerby, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 59 to 63 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about June through October (about 165 days). The particle-size control section averages 18 to 25 percent clay and 3 to 20 percent rock fragments, mostly gravel. Mineralogy is mixed. Some pedons have a BA horizon and/or a BC horizon.

The A horizon has dry color of 10YR 4/3, 4/4, 5/3, 5/4, or 5/6 or 7.5YR 5/3. Moist color is 10YR 3/3 or 3/4, 7.5YR 3/3 or 3/4, or 5YR 3/3. Texture is coarse sandy loam, sandy loam, or loam. The content of clay ranges from 12 to 17 percent. The content of gravel is 0 to 5 percent. The content of organic matter is 2 to 8 percent. By sum of cations, base saturation ranges from 50 to 70 percent. Reaction ranges from moderately acid to neutral.

The Bw horizon has dry color of 10YR 5/4 or 7.5YR 5/3 or 5/4. Moist color is 7.5YR 3/3, 3/4, or 4/4. Texture is coarse sandy loam or sandy loam. The content of clay ranges from 16 to 19 percent. The content of gravel is 0 to 5 percent. The content of organic matter is 0.2 to 1.0 percent. By sum of cations, base saturation ranges from 40 to 55 percent. Reaction is moderately acid or slightly acid.

The upper part of the Bt horizon has dry color of 10YR 5/4; 7.5YR 4/6, 5/3, 5/4, or 5/6; or 5YR 5/4. Moist color is 7.5YR 3/3, 3/4, 4/4, or 4/6 or 5YR 3/4 or 4/4. Texture is coarse sandy loam, sandy loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 18 to 23 percent. The content of gravel is 0 to 15 percent. The content of organic matter is 0 to 0.2 percent. By sum of cations, base saturation ranges from 55 to 74 percent. Reaction ranges from moderately acid to neutral.

The lower part of the Bt horizon has dry color of 7.5YR 5/4, 5/6, or 5/8 or 5YR 5/4. Moist color is 7.5YR 4/4 or 4/6 or 5YR 4/4 or 4/6. Texture is sandy loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 18 to 33 percent. The content of gravel is 0 to 25 percent. The content of organic matter is 0 to 0.2 percent. By sum of cations, base saturation ranges from 75 to 85 percent. Reaction ranges from moderately acid to neutral.

The BCt horizon has dry color of 10YR 6/4 or 6/6, 7.5YR 5/6 or 6/6, or 5YR 5/6. Moist color is 10YR 5/6; 7.5YR 4/6, 5/4, or 5/6; or 5YR 4/6. Texture is sandy loam, gravelly sandy loam, or sandy clay loam. The content of clay ranges from 16 to 26 percent. The content of gravel is 0 to 25 percent. The content of organic matter is 0 to 0.2 percent. Reaction ranges from moderately acid to neutral.

The C horizon, where it occurs, has dry color of 10YR 6/4, 6/6, or 7/3 or 7.5YR 6/6. Moist color is 10YR 5/3 or 5/4 or 7.5YR 4/6. Texture is sandy loam or fine sandy loam. The content of clay ranges from 12 to 18 percent. The content of gravel is 0 to 10 percent. Reaction ranges from moderately acid to neutral.

Parrott Series

The Parrott series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on bars on flood plains. Slopes range from 0 to 2 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 63 degrees F (17 degrees C).

Taxonomic class: Fine-silty, mixed, superactive, thermic Fluventic Haploxerepts

Typical Pedon

Parrott silt loam, on a slope of 1 percent, under a cover of walnut trees, at an elevation of 151 feet (46 m). When described on 10/26/1988, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches (0 to 4 cm); light brownish gray (2.5Y 6/2) silt loam, very dark grayish brown (2.5Y 3/2) moist; 22 percent clay; moderate thin platy structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine tubular pores; neutral, pH 7.2 by Hellige-Truog; abrupt smooth boundary.

A2—2 to 8 inches (4 to 20 cm); grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; 23 percent clay; moderate thin and medium platy structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots; many very fine irregular and tubular pores; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

Bw1—8 to 20 inches (20 to 52 cm); light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; 21 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine irregular and tubular pores; 8 percent silt coatings on surfaces along pores; 1 percent medium dark grayish brown (10YR 4/2) manganese masses and 25 percent medium brown (7.5YR 5/4) oxidized iron masses; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

Bw2—20 to 37 inches (52 to 95 cm); light brownish gray (10YR 6/2) silt loam, dark brown (10YR 3/3) moist; 21 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; few very fine roots; common fine and many very fine tubular pores; 8 percent silt coatings on surfaces along pores; 10 percent medium brown (7.5YR 4/3) oxidized iron masses; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

Bw3—37 to 49 inches (95 to 125 cm); brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; 21 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; few very fine and fine roots; few fine and many very fine tubular pores; 8 percent light brownish gray (10YR 6/2) silt coatings on surfaces along pores; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

Bw4—49 to 63 inches (125 to 160 cm); pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; 19 percent clay; weak fine subangular blocky structure; slightly hard,

very friable, slightly sticky, moderately plastic; few fine roots; few fine and many very fine tubular pores; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

C—63 to 89 inches (160 to 225 cm); yellowish brown (10YR 5/4) silt loam, dark yellowish brown (10YR 3/4) moist; 17 percent clay; massive; slightly hard, very friable, slightly sticky, moderately plastic; few fine roots; few fine and many very fine tubular pores; neutral, pH 7.2 Hellige-Truog.

Type location: Butte County, California; about 3.8 miles northeast of Nord, approximately 2,200 feet north and 1,700 feet east of the intersection of T. 22 N. and 23 N. and R. 1 W. and 2 W.; 39 degrees, 48 minutes, 13 seconds north latitude and 122 degrees, 1 minute, 23 seconds west longitude; NAD27; USGS Quad: Foster Island, California.

Range in Characteristics

The depth of the soils is more than 80 inches (203 cm). The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 18 to 27 percent clay. Mineralogy is mixed. The content of organic matter decreases regularly with increasing depth. It ranges from 1 to 5 percent to a depth of 49 inches (124 cm) and is less than 1 percent from 49 to 89 inches (124 to 226 cm). By ammonium acetate, base saturation is 100 percent throughout the profile. A fluctuating water table can occur at a depth of 60 inches (152 cm) or more from December through March. Redoximorphic features, such as iron masses and manganese masses, occur in the Ap and A horizons. Some pedons have a gravelly substratum below a depth of 40 inches (102 cm) and/or have disseminated lime at a depth of 45 to 72 inches (114 to 183 cm).

The A horizon has dry color of 2.5Y 6/2 or 10YR 5/2, 5/3, or 6/3. Moist color is 2.5Y 3/2 or 10YR 3/2, 3/3, 4/2, or 4/3. Texture is silt loam. The content of clay ranges from 18 to 27 percent. Reaction ranges from slightly acid to slightly alkaline.

The Bw horizon has dry color of 10YR 5/3, 5/4, or 6/3. Moist color is 10YR 3/3, 3/4, or 4/3. Texture is silt loam. The content of clay ranges from 18 to 27 percent. Reaction is neutral or slightly alkaline.

The C horizon has dry color of 10YR 5/3, 5/4, or 6/3. Moist color is 10YR 3/3, 3/4, or 4/3. Texture is silt loam, loam, fine sandy loam, sandy loam, clay loam, or silty clay loam. The content of clay ranges from 12 to 30 percent. The content of gravel is 0 to 5 percent. Reaction is neutral or slightly alkaline.

Perkins Series

The Perkins series consists of very deep, well drained soils that formed in alluvium derived from igneous and metamorphic rocks. These soils are on low terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs

Typical Pedon

Perkins gravelly loam, on a slope of 2 percent, under a cover of yellow starthistle and annual grasses, at an elevation of 135 feet (41 m). When described on 6/8/1994, the soil was dry to a depth of 24 inches (61 cm) and moist from 24 to 73 inches (61 to 185 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 8 inches (0 to 20 cm); strong brown (7.5YR 4/6) gravelly loam, dark brown (7.5YR 3/4) moist; 13 percent clay; strong fine angular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and coarse roots;

many very fine irregular pores; 25 percent mixed gravel; neutral, pH 7.3 by pH meter 1:1 water; clear smooth boundary.

Bt1—8 to 24 inches (20 to 61 cm); yellowish red (5YR 4/6) gravelly loam, dark reddish brown (5YR 3/4) moist; 22 percent clay; strong fine angular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; many very fine irregular pores; 60 percent clay films on faces of peds; 25 percent mixed gravel; neutral, pH 7.1 by pH meter 1:1 water; abrupt smooth boundary.

Bt2—24 to 38 inches (61 to 97 cm); yellowish red (5YR 5/6) very gravelly sandy clay loam, dark reddish brown (5YR 3/4) moist; 17 percent clay; strong fine angular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine roots; many very fine irregular pores; 60 percent clay films on faces of peds; 40 percent mixed gravel; neutral, pH 7.0 by pH meter 1:1 water; abrupt smooth boundary.

BC—38 to 48 inches (97 to 122 cm); yellowish red (5YR 5/6) very gravelly sandy loam, dark reddish brown (5YR 3/4) moist; 12 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; common very fine roots; many fine irregular pores; 60 percent clay films on rock fragments; 60 percent mixed gravel; neutral, pH 7.1 by pH meter 1:1 water; abrupt smooth boundary.

C—48 to 73 inches (122 to 185 cm); light brown (7.5YR 6/4) very gravelly sandy loam, brown (7.5YR 4/4) moist; 10 percent clay; massive; slightly hard, very friable, nonsticky, nonplastic; many fine irregular pores; 10 percent clay films on rock fragments; 5 percent fine black (N 2/0) manganese surface coatings; 60 percent mixed gravel; neutral, pH 7.2 by pH meter 1:1 water.

Type location: Butte County, California; about 1.5 miles south of Palermo, approximately 1,700 feet east and 2,300 feet south of the northwest corner of sec. 17, T. 18 N., R. 4 E.; 39 degrees, 35 minutes, 10 seconds north latitude and 121 degrees, 33 minutes, 0 seconds west longitude; NAD27; USGS Quad: Palermo, California.

Range in Characteristics

The depth of the soils is more than 80 inches (203 cm), and the depth to a very gravelly subsoil layer is 16 to 40 inches (41 to 102 cm). The mean annual soil temperature is 63 to 65 degrees F (17 to 18 degrees C). The particle-size control section averages 27 to 35 percent clay and 25 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur at a depth of 60 to more than 80 inches (152 cm to more than 203 cm) from December through March. Rock fragments on the surface range from 0 to 10 percent gravel.

The Ap horizon has dry color of 7.5YR 3/4 or 4/6 or 5YR 5/6. Moist color is 7.5YR 3/4 or 5YR 3/6. Texture is gravelly loam. The content of clay ranges from 13 to 26 percent. The content of gravel is 15 to 25 percent. The content of organic matter is 1.2 to 2 percent. Reaction is neutral or slightly alkaline.

The Bt horizon has dry color of 7.5YR 4/4 or 5/6 or 5YR 4/6 or 5/6. Moist color is 7.5YR 3/4 or 4/6 or 5YR 3/4, 3/6, 4/4, or 4/6. Texture is gravelly loam, gravelly clay loam, or very gravelly sandy clay loam. The content of clay ranges from 17 to 35 percent. The content of gravel is 15 to 60 percent. The content of organic matter is 0.5 to 0.9 percent. Reaction is neutral or slightly alkaline.

The BC horizon has dry color of 5YR 5/6. Moist color is 5YR 3/4 or 3/6. Texture is very gravelly sandy loam. The content of clay ranges from 12 to 18 percent. The content of gravel is 50 to 60 percent. The content of organic matter is 0 to 0.5 percent. Reaction is neutral or slightly alkaline.

The C horizon has dry color of 7.5YR 5/4 or 6/4. Moist color is 7.5YR 3/4 or 4/4. Texture is very gravelly sandy loam. The content of clay ranges from 10 to 20 percent. The content of gravel is 15 to 60 percent. The content of organic matter is 0 to 0.5 percent. Redoximorphic features occur as surface coatings of manganese. Reaction is neutral or slightly alkaline.

Powderhouse Series

The Powderhouse series consists of moderately deep, well drained soils that formed in tephra, residuum, and colluvium derived from volcanic mudflow, basalt, and andesite. These soils are on the tops and side slopes of ridges and nunataks on volcanic Sierra Nevada and Southern Cascade mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Medial-skeletal, glassy, frigid Humic Haploxerands

Typical Pedon

Powderhouse medial sandy loam, on a northwest-facing slope of 32 percent, under a cover of mixed conifers and shrubs, at an elevation of 4,800 feet (1,463 m). When described on 9/24/1996, the soil was moist throughout. Clay percentages are based on the apparent field texture. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); mat of fresh and slightly decomposed needles and twigs.

A1—2 to 4 inches (5 to 10 cm); dark grayish brown (10YR 4/2) medial sandy loam, black (10YR 2/1) moist; 10 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine irregular pores; extremely hydrophobic, smeary; 10 percent subrounded andesite gravel; very strongly acid, pH 5.0 by pH meter 1:1 water; NaF pH 10.3; abrupt smooth boundary.

A2—4 to 11 inches (10 to 28 cm); brown (10YR 4/3) medial sandy loam, very dark brown (10YR 2/2) moist; 12 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine irregular pores; extremely hydrophobic, smeary; 10 percent subrounded andesite gravel; very strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 11.0; abrupt smooth boundary.

Bw—11 to 27 inches (28 to 69 cm); pale brown (10YR 6/3) very cobbly medial sandy loam, brown (10YR 4/3) moist; 14 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine and few medium and coarse roots; common very fine irregular pores; extremely hydrophobic, smeary; 30 percent subangular andesite cobbles and 20 percent subangular andesite gravel; very strongly acid, pH 5.0 by pH meter 1:1 water; NaF pH 11.1; abrupt smooth boundary.

C—27 to 36 inches (69 to 91 cm); pale brown (10YR 6/3) very gravelly medial coarse sandy loam, brown (10YR 4/3) moist; 12 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine and few medium and coarse roots; common very fine irregular pores; extremely hydrophobic, smeary; 10 percent well rounded andesite cobbles and 50 percent well rounded andesite gravel; very strongly acid, pH 4.8; NaF pH 10.8; abrupt wavy boundary.

Cr—36 to 82 inches (91 to 208 cm); moderately cemented mudflow with imbedded round andesitic gravel and cobbles; few very fine and fine roots matted around rock fragments; matrix can be dug with difficulty; fragments are indurated; few roots in fractures; 40 percent well rounded andesite cobbles and 25 percent well rounded andesite gravel.

Type location: Plumas County, California; about 2 miles south of Camel Peak Lookout, approximately 1,900 feet west and 1,850 feet north of the southeast corner of sec. 8, T. 21 N., R. 8 E.; 39 degrees, 41 minutes, 23.9 seconds north latitude and 121 degrees, 6 minutes, 25.3 seconds west longitude; NAD83; USGS Quad: American House, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The particle-size control section averages 10 to 15 percent clay and 35 to 80 percent rock fragments, mostly gravel and cobbles. Mineralogy is glassy. By ammonium acetate, base saturation ranges from 10 to 35 percent. P retention is more than 95 to a depth of 36 inches (91 cm). The melanic index is 1.70. Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders. Some pedons have a 2C horizon.

The A horizon has dry color of 10YR 4/2 or 4/3 or 7.5YR 3/2 or 4/2. Moist color is 10YR 2/1 or 2/2 or 5YR 2.5/1 or 3/2. Texture is dominantly medial sandy loam or medial fine sandy loam but in some pedons is gravelly medial sandy loam or very gravelly medial sandy loam. The content of clay ranges from 8 to 15 percent. The horizon has 5 to 20 percent gravel, 0 to 5 percent cobbles, and 0 to 10 percent stones. The content of organic matter is 12 to 35 percent. Acid oxalate extractable Al plus 1/2 Fe ranges from 2.9 to 3.5. The content of glass ranges from 17 to 18 percent. NaF pH is 10.0 to 12.0. Reaction ranges from very strongly acid to slightly acid.

The Bw horizon has dry color of 10YR 4/2, 5/3, 5/4, 6/3, or 7/3 or 7.5YR 5/3. Moist color is 10YR 2/2 or 4/3, 7.5YR 3/3 or 3/4, or 5YR 3/3. Texture is very cobbly medial sandy loam, very gravelly medial sandy loam, extremely cobbly medial sandy loam, or extremely cobbly medial coarse sandy loam. The content of clay ranges from 10 to 18 percent. The horizon has 20 to 40 percent gravel, 10 to 35 percent cobbles, and 10 to 20 percent stones. The content of organic matter is 9 to 12 percent. Acid oxalate extractable Al plus 1/2 Fe ranges from 1.7 to 2.5. The content of glass ranges from 10 to 30 percent. NaF pH is 11.0 to 11.5. Reaction ranges from very strongly acid to slightly acid.

The C horizon has dry color of 10YR 6/3 or 6/4. Moist color is 10YR 4/3 or 4/4. Texture is very gravelly, extremely gravelly, very cobbly, or extremely cobbly medial coarse sandy loam. The content of clay ranges from 10 to 15 percent. The horizon has 50 to 60 percent gravel, 0 to 35 percent cobbles, and 0 to 20 percent stones. The content of organic matter is 4 to 9 percent. Acid oxalate extractable Al plus 1/2 Fe ranges from 2.5 to 3.2. The content of glass ranges from 30 to 60 percent or more. NaF pH is 10.0 to 11.0. Reaction is very strongly acid or strongly acid.

Powellton Series

The Powellton series consists of very deep, well drained soils that formed in weathered tephra over residuum and colluvium derived from metadiorite, metavolcanic rocks, gabbro, or diorite. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 71 inches (1,803 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Fine-loamy, parasesquic, mesic Andic Haplohumults

Typical Pedon

Powellton gravelly loam, on a west-southwest-facing slope of 15 percent, under a cover of mixed conifers, at an elevation of 3,345 feet (1,020 m). When described on 11/28/1995, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); pine litter.
Oe—0.5 inch to 2 inches (1 to 4 cm); partially decomposed pine litter.
A—2 to 4 inches (4 to 9 cm); reddish brown (5YR 5/3) gravelly loam, dark reddish brown (5YR 3/3) moist; 25 percent clay; strong fine granular structure; soft, very

friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine to medium and common coarse irregular and tubular pores; noneffervescent; 25 percent gravel; moderately acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.

Bt1—4 to 9 inches (9 to 22 cm); reddish brown (5YR 5/4) gravelly loam, dark reddish brown (5YR 3/4) moist; 23 percent clay; strong fine and medium granular structure; soft, very friable, slightly sticky, moderately plastic; many very fine to medium roots; many very fine and fine and common medium and coarse irregular and tubular pores; few distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 21 percent gravel and 5 percent subrounded cobbles; moderately acid, pH 5.7 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.

Bt2—9 to 15 inches (22 to 37 cm); yellowish red (5YR 5/6) loam, red (2.5YR 4/6) moist; 26 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, moderately plastic; many very fine to medium and common coarse roots; many very fine to medium and common coarse irregular and tubular pores; many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 13 percent gravel; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.0; clear smooth boundary.

Bt3—15 to 24 inches (37 to 60 cm); reddish yellow (5YR 6/6) clay loam, red (2.5YR 4/6) moist; 28 percent clay; strong medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine and coarse and many fine and medium roots; many very fine and fine and common medium and coarse tubular pores; many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 5 percent gravel; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 9.6; clear smooth boundary.

Bt4—24 to 30 inches (60 to 75 cm); reddish yellow (5YR 7/6) clay loam, red (2.5YR 4/6) moist; 29 percent clay; strong medium subangular blocky structure; moderately hard, firm, slightly sticky, moderately plastic; common very fine, fine, and coarse and many medium roots; many very fine and fine and common medium and coarse tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 2 percent gravel; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 9.4; clear smooth boundary.

Bt5—30 to 41 inches (75 to 105 cm); reddish yellow (7.5YR 7/6) silt loam, strong brown (7.5YR 5/8) moist; 24 percent clay; moderate medium subangular blocky structure; moderately hard, firm, slightly sticky, moderately plastic; common very fine and coarse and many fine and medium roots; many very fine and fine and common medium and coarse tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 2 percent gravel; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 9.3; gradual smooth boundary.

Bt6—41 to 61 inches (105 to 156 cm); reddish yellow (7.5YR 7/6) loam, strong brown (7.5YR 5/8) moist; 17 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium and coarse tubular pores; common faint discontinuous clay films on faces of peds and in pores; noneffervescent; strongly acid, pH 5.4 by pH meter 1:1 water; gradual smooth boundary.

Bt7—61 to 83 inches (156 to 212 cm); reddish yellow (7.5YR 8/6) loam, strong brown (7.5YR 5/8) moist; 18 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; common prominent discontinuous red (2.5YR 4/6) and common faint discontinuous clay films on faces of peds and in pores; noneffervescent; strongly acid, pH 5.3 by pH meter 1:1 water.

Type location: Butte County, California; about 0.5 mile north of Lovelock, approximately 800 feet south and 400 feet east of the northwest corner of sec. 31, T. 24 N., R. 4 E.; 39 degrees, 54 minutes, 59.7 seconds north latitude and 121 degrees, 34 minutes, 34.7 seconds west longitude; NAD27; USGS Quad: Stirling City, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 54 to 56 degrees F (12 to 13 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 27 to 35 percent clay and 0 to 25 percent rock fragments, mostly gravel. Mineralogy is parasesquic. Acid oxalate extractable Al plus ½ Fe ranges from 1 to 1.6 to a depth of 15 inches (38 cm). Rock fragments on the surface range from 0 to 35 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 5YR 4/6, 5/3, 5/4, or 6/4 or 7.5YR 4/6, 5/4, 6/6, or 7/4. Moist color is 5YR 3/3, 4/3, 3/4, or 4/4; 7.5YR 3/3, 3/4, 4/3, or 4/4; or 2.5YR 2/4, 3/4, or 4/6. Texture is loam, silt loam, gravelly loam, very gravelly loam, gravelly sandy loam, or very gravelly sandy loam. The content of clay ranges from 18 to 27 percent. The content of gravel is 2 to 45 percent. The content of organic matter is 8 to 13 percent. By sum of cations, base saturation ranges from 35 to 45 percent. By ammonium acetate, CEC ranges from 20 to 30. NaF pH is 9.8 to 11. Reaction ranges from strongly acid to slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 4/6, 5/6, or 5/8 or 5YR 5/4, 4/6, 5/6, 6/4, 6/6, 6/8, or 7/6. Moist color is 7.5YR 3/4, 4/4, 4/6, or 5/6; 5YR 3/4, 4/3, 4/4, 4/6, 5/6, or 5/8; or 2.5YR 4/6. Texture is loam, gravelly loam, clay loam, or silty clay loam. The content of clay ranges from 22 to 35 percent. The content of gravel is 2 to 20 percent, and the content of cobbles 0 to 15 percent. The content of organic matter is 0.5 to 7 percent. By sum of cations, base saturation ranges from 25 to 35 percent. By ammonium acetate, CEC ranges from 8 to 20. NaF pH is 9.2 to 10.5. Reaction ranges from very strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 5YR 4/6, 4/8, 5/6, or 6/4; 7.5YR 6/6, 7/6, or 8/6; or 10YR 7/6 or 8/6. Moist color is 2.5YR 4/4, 4/6, 4/8, or 5/6; 5YR 4/6, 5/6, or 5/8; or 7.5YR 5/6, 5/8, 6/8, or 7/8. Texture is silt loam, loam, clay loam, silty clay loam, gravelly loam, or gravelly clay loam. The content of clay ranges from 17 to 35 percent. The content of gravel is 0 to 25 percent, and the content of cobbles is 0 to 25 percent. The content of organic matter is 0.1 to 1 percent. By sum of cations, base saturation ranges from 10 to 30 percent. By ammonium acetate, CEC ranges from 4 to 12. NaF pH is 9.0 to 9.8. Reaction ranges from very strongly acid to moderately acid.

Rackerby Series

The Rackerby series consists of shallow, well drained soils that formed in residuum and colluvium derived from intrusive igneous rocks, mainly quartz diorite. These soils are on side slopes on plutons on Sierra Nevada foothills. Slopes range from 15 to 30 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, thermic, shallow Typic Haploxerepts

Typical Pedon

Rackerby very gravelly sandy loam, on an east-facing slope of 21 percent, under a cover of blue oak, foothill pine, interior live oak, buckbrush, wild oat, rattlesnake brome, hedgehog dogtail, and Italian ryegrass, at an elevation of 1,770 feet (540 m).

When described on 9/14/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); dark yellowish brown (10YR 4/4) very gravelly sandy loam, dark brown (10YR 3/3) moist; 15 percent clay; moderate very fine and fine subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; many very fine roots; many very fine tubular pores; 40 percent subangular gravel; slightly acid, pH 6.4 by Hellige-Truog; abrupt smooth boundary.

AB—2 to 5 inches (5 to 13 cm); dark yellowish brown (10YR 4/4) gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; 18 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine tubular pores; 30 percent subangular gravel; slightly acid, pH 6.4 by Hellige-Truog; clear wavy boundary.

Bw—5 to 13 inches (13 to 33 cm); yellowish brown (10YR 5/4) very gravelly sandy loam, dark yellowish brown (10YR 4/6) moist; 20 percent clay; strong medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; common very fine roots; many very fine and fine tubular pores; 5 percent subangular cobbles and 35 percent subangular gravel; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

Cr—13 inches (33 cm); weakly cemented quartz diorite bedrock.

Type location: Butte County, California; about 2.4 miles southwest of Hurleton, approximately 2,000 feet south and 2,600 feet west of the northeast corner of sec. 34, T. 19 N., R. 5 E.; 39 degrees, 27 minutes, 46.71 seconds north latitude and 121 degrees, 23 minutes, 57.82 seconds west longitude; NAD83; USGS Quad: Bangor, California.

Range in Characteristics

The depth to paralithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 59 to 63 degrees F (16 to 17 degrees C). The soil moisture control section is dry in all parts from about June through October (about 165 days). The particle-size control section averages 10 to 18 percent clay and 35 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 0 to 20 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones. Some pedons have a BA horizon.

The A horizon has dry color of 7.5YR 4/4, 4/6, or 5/4 or 10YR 4/4. Moist color is 7.5YR 3/3 or 3/4 or 10YR 3/3. Texture is gravelly loam, gravelly sandy loam, very gravelly sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 8 to 16 percent. The horizon has 15 to 40 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 3 to 5 percent. Reaction is slightly acid.

The AB horizon has dry color of 7.5YR 4/4, 4/6, 5/4, or 5/6 or 10YR 4/4. Moist color is 7.5YR 3/3, 3/4, or 4/4 or 10YR 3/4. Texture is gravelly loam, very gravelly loam, gravelly sandy loam, very gravelly sandy loam, or gravelly coarse sandy loam. The content of clay ranges from 10 to 20 percent. The horizon has 25 to 45 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. By sum of cations, base saturation ranges from 60 to 70 percent. The content of organic matter is 1.5 to 3 percent. Reaction is slightly acid.

The Bw horizon has dry color of 7.5YR 4/6, 5/4, or 5/6 or 10YR 5/4. Moist color is 7.5YR 3/4, 4/4, or 4/6 or 10YR 4/6. Texture is very cobbly loam, very gravelly sandy loam, extremely cobbly sandy loam, or very gravelly coarse sandy loam. The content of clay ranges from 10 to 20 percent. The horizon has 10 to 45 percent gravel, 5 to 70 percent cobbles, and 0 to 5 percent stones. By sum of cations, base saturation ranges from 60 to 74 percent. The content of organic matter is 0.2 to 1.0 percent. Reaction is slightly acid.

Redbone Series

The Redbone series consists of deep, well drained soils that formed in tephra over residuum derived from volcanic rocks. These soils are on the top of volcanic ridges in the Cascade Mountains. Slopes range from 2 to 30 percent. The mean annual precipitation is about 70 inches (1,778 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Medial over loamy-skeletal, amorphic over isotic, mesic Ultic Haploxerands

Typical Pedon

Redbone gravelly medial sandy loam, on a south-southwest-facing slope of 10 percent, under a cover of white fir, ponderosa pine, Douglas-fir, incense cedar, and sugar pine, at an elevation of 4,600 feet (1,402 m). When described on 8/7/1997, the soil was dry throughout. Clay percentages are based on the apparent field texture. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); needles and twigs.

Oe—1 to 2 inches (3 to 4 cm); partially decomposed needles and twigs.

A—2 to 4 inches (4 to 9 cm); reddish brown (5YR 5/4) gravelly medial sandy loam, dark reddish brown (2.5YR 3/4) moist; 14 percent clay; weak fine granular structure; loose, very friable, nonsticky, nonplastic; many very fine and common fine roots; many very fine to medium irregular and tubular pores; noneffervescent; 30 percent gravel; slightly acid, pH 6.3 by pH meter 1:1 water; NaF pH 10.6; abrupt smooth boundary.

Bt1—4 to 7 inches (9 to 19 cm); reddish brown (5YR 5/4) gravelly medial sandy loam, dark reddish brown (2.5YR 3/4) moist; 16 percent clay; weak fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; many very fine to medium roots; many very fine irregular and tubular pores; few clay bridges between sand grains; noneffervescent; 10 percent gravel; slightly acid, pH 6.3 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.

Bt2—7 to 17 inches (19 to 42 cm); red (2.5YR 5/6) gravelly medial fine sandy loam, red (2.5YR 4/6) moist; 17 percent clay; weak fine and medium subangular blocky structure; loose, very friable, nonsticky, nonplastic; common very fine, many fine and medium, and few coarse roots; many very fine and fine irregular and tubular pores; common clay bridges between sand grains; noneffervescent; 30 percent gravel and 5 percent cobbles; moderately acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.2; clear smooth boundary.

Bt3—17 to 28 inches (42 to 70 cm); brown (7.5YR 5/4) very gravelly fine sandy loam, reddish brown (5YR 4/3) moist; 17 percent clay; weak fine and medium subangular blocky structure; loose, very friable, nonsticky, nonplastic; common very fine, many fine and medium, and few coarse roots; many very fine and fine irregular and tubular pores; common clay bridges between sand grains; noneffervescent; 35 percent gravel and 5 percent cobbles; moderately acid, pH 5.6 by pH meter 1:1 water; NaF pH 10.0; clear smooth boundary.

Bt4—28 to 41 inches (70 to 103 cm); brown (7.5YR 5/4) very gravelly coarse sandy loam, reddish brown (5YR 4/3) moist; 17 percent clay; weak fine subangular blocky structure; loose, very friable, nonsticky, nonplastic; common very fine to medium and few coarse roots; many very fine and fine irregular and tubular pores; few clay bridges between sand grains; noneffervescent; 45 percent gravel; moderately acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.1; clear smooth boundary.

Bt5—41 to 54 inches (103 to 138 cm); brown (7.5YR 5/4) very gravelly coarse sandy loam, brown (7.5YR 4/4) moist; 15 percent clay; weak fine granular structure;

loose, very friable, nonsticky, nonplastic; common very fine and fine and few coarse roots; many very fine and fine irregular and tubular pores; few clay bridges between sand grains; noneffervescent; 50 percent gravel; slightly acid, pH 6.1 by pH meter 1:1 water; NaF pH 10.4; clear smooth boundary.

Cr—54 inches (138 cm); very weakly cemented, weathered mudflow bedrock; roots and fractures occurring more than 4 inches (10 cm) apart.

Type location: Butte County, California; about 1.7 miles east of Lomo, approximately 1,600 feet west and 2,400 feet north of the southwest corner of sec. 7, T. 25 N., R. 3 E.; in an unsectionized area; 40 degrees, 02 minutes, 20.64 seconds north latitude and 121 degrees, 35 minutes, 1.02 seconds west longitude; NAD83; USGS Quad: Butte Meadows, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 10 to 18 percent clay and 15 to 35 percent rock fragments, mostly gravel, in the upper part and 15 to 22 percent clay and 35 to 50 percent rock fragments, mostly gravel, in the lower part. Mineralogy is amorphic over isotic. Acid oxalate extractable Al plus $^1/_2$ Fe ranges from 2.2 to 2.6 to a depth of 16 inches (41 cm). P retention ranges from 85 to 96 percent throughout the profile. By sum of cations, base saturation ranges from 28 to 43 percent throughout the profile. Rock fragments on the surface range from 10 to 35 percent gravel, 0 to 15 percent cobbles, and 0 to 10 percent stones.

The A horizon has dry color of 7.5YR 4/3, 5/4, 6/3, or 6/4 or 5YR 5/4 or 6/3. Moist color is 7.5YR 3/2 or 3/3, 5YR 3/3 or 4/3, or 2.5YR 3/4. Texture is gravelly medial sandy loam, very gravelly medial sandy loam, or gravelly medial fine sandy loam. The content of clay ranges from 10 to 16 percent. The horizon has 15 to 30 percent gravel, 0 to 5 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 8 to 12 percent. NaF pH is 10 to 11.5. Reaction ranges from strongly acid to slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 5/4, 5/6, or 6/4; 5YR 5/4, 5/6, 6/4, or 6/6; or 2.5YR 5/6. Moist color is 7.5YR 3/3; 5YR 3/3, 4/3, 4/4, or 4/6; or 2.5YR 3/3, 3/4, or 4/6. Texture is gravelly medial sandy loam, very gravelly medial sandy loam, gravelly medial fine sandy loam, or gravelly medial loam. The content of clay ranges from 12 to 18 percent. The content of gravel is 15 to 35 percent, the content of cobbles is 0 to 5 percent, and the content of stones is 0 to 5 percent. The content of organic matter is 2 to 6 percent. NaF pH is 10 to 11.5. Reaction ranges from strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 10YR 5/4, 6/6, or 7/6 or 7.5YR 5/4, 5/6, or 6/4. Moist color is 10YR 4/3 or 4/4, 7.5YR 4/4 or 5/4, or 5YR 4/3. Texture is very gravelly sandy loam, extremely gravelly sandy loam, very gravelly fine sandy loam, very gravelly coarse sandy loam, or very gravelly sandy clay loam. The content of clay ranges from 15 to 22 percent. The content of gravel is 35 to 75 percent, the content of cobbles is 0 to 10 percent, and the content of stones is 0 to 10 percent. The content of organic matter is 0.5 to 2 percent. NaF pH is 9.7 to 10.5. Reaction ranges from very strongly acid to slightly acid.

Redding Series

The Redding series consists of moderately deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on mounds on intermediate terraces. Slopes range from 0 to 9 percent. The mean annual

precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, active, thermic Abruptic Durixeralfs

Typical Pedon

Redding loam, on an east-facing slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 105 feet (32 m). When described on 5/13/1992, the soil was moist below a depth of 10 inches (25 cm). (Colors are for dry soil unless otherwise noted.)

A1—0 to 4 inches (0 to 10 cm); reddish yellow (7.5YR 6/6) loam, dark brown (7.5YR 3/4) moist; 22 percent clay; strong medium angular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine roots; few very fine irregular pores; 10 percent fine distinct light yellowish brown (10YR 6/4 dry) and brown (7.5YR 4/4 moist) oxidized iron masses; 5 percent rounded gravel; neutral, pH 6.8; abrupt smooth boundary.

A2—4 to 11 inches (10 to 28 cm); strong brown (7.5YR 5/6) loam, strong brown (5YR 4/6) moist; 24 percent clay; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots; few very fine tubular pores; 10 percent fine distinct reddish yellow (7.5YR 6/6 dry) and reddish yellow (7.5YR 6/8 moist) oxidized iron masses; 5 percent rounded gravel; neutral, pH 6.8; clear smooth boundary.

BA—11 to 24 inches (28 to 61 cm); yellowish red (5YR 5/6) loam, dark reddish brown (5YR 3/4) moist; 24 percent clay; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; common very fine irregular pores; 20 percent clay films on all faces of peds; 1 percent fine faint reddish yellow (5YR 6/6 dry) and yellowish red (5YR 4/6 moist) oxidized iron masses; 5 percent rounded gravel; neutral, pH 6.8; abrupt smooth boundary.

2Bt—24 to 35 inches (61 to 89 cm); yellowish red (5YR 5/6) clay, yellowish red (5YR 4/6) moist; 50 percent clay; moderate medium angular blocky structure; very hard, firm, moderately sticky, moderately plastic; few very fine tubular pores; 50 percent clay films on all faces of peds; 10 percent manganese coatings; 5 percent rounded gravel; neutral, pH 7.3; abrupt smooth boundary.

3Bqm—35 to 40 inches (89 to 102 cm); very gravelly very strongly cemented duripan; cemented by silica; 60 percent rounded gravel.

Type location: Butte County, California; about 3.2 miles northwest of Honcut, approximately 150 feet south and 2,000 feet east of the northwest corner of sec. 6, T. 18 N., R. 4 E.; 39 degrees, 21 minutes, 51 seconds north latitude and 121 degrees, 34 minutes, 6 seconds west longitude; NAD27; USGS Quad: Honcut, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 63 to 65 degrees F (17 to 18 degrees C). The particle-size control section averages 35 to 50 percent clay and 5 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 16 inches (41 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 0 to 5 percent gravel. Some pedons have an AB or Bt horizon.

The A horizon has dry color of 7.5YR 5/4, 5/6, 6/4, or 6/6 or 5YR 5/6. Moist color is 7.5YR 3/3, 3/4, or 4/6; 5YR 3/4, 4/4, or 4/6; or 2.5YR 3/4. Texture is loam, gravelly loam, sandy loam, gravelly sandy loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 12 to 26 percent. The content of gravel is 5 to 20 percent. The content of organic matter is 0.2 to 2 percent. By sum of cations, base saturation ranges from 60 to 75 percent. Redoximorphic features occur as oxidized

iron masses with dry color of 7.5YR 5/6, 5/8, 6/6, or 7/4 or 10YR 6/4 and manganese nodules with dry color of N 2/0. Reaction ranges from moderately acid to neutral.

The BA horizon has dry color of 7.5YR 5/4 or 5YR 5/6. Moist color is 7.5YR 3/4 or 5YR 3/4. Texture is loam, gravelly loam, sandy loam, or gravelly sandy loam. The content of clay ranges from 15 to 26 percent. The horizon has 0 to 30 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 0.1 to 0.5 percent. By sum of cations, base saturation ranges from 60 to 75 percent. Redoximorphic features occur as oxidized iron masses with dry color of 7.5YR 7/4, 10YR 6/4, or 5YR 6/6 and manganese nodules with dry color of N 2/0. Reaction ranges from moderately acid to neutral.

The Bt horizon, where it occurs, has dry color of 7.5YR 5/4 or 5YR 5/6. Moist color is 5YR 4/4 or 4/6 or 2.5YR 3/4. Texture is loam, gravelly loam, cobbly loam, clay loam, gravelly clay loam, cobbly clay loam, sandy clay loam, gravelly sandy clay loam, or cobbly sandy clay loam. The content of clay ranges from 18 to 34 percent. The horizon has 0 to 20 percent gravel and 0 to 10 percent cobbles. By sum of cations, base saturation ranges from 60 to 75 percent. Redoximorphic features occur as manganese nodules with dry color of N 2/0. Reaction is slightly acid or neutral.

The 2Bt horizon has dry color of 7.5YR 5/4, 5YR 5/6, or 2.5YR 4/6. Moist color is 5YR 4/4 or 4/6 or 2.5YR 3/4 or 3/6. Texture is clay, gravelly clay, or cobbly clay. The content of clay ranges from 40 to 50 percent. The horizon has an abrupt upper boundary with an absolute clay increase of 15 to 30 percent. It has 0 to 35 percent gravel and 0 to 20 percent cobbles. The content of organic matter is 0.5 to 1 percent. By sum of cations, base saturation ranges from 75 to 95 percent. Redoximorphic features occur as manganese nodules with dry color of N 2/0. Reaction is slightly acid or neutral.

The 3Bqm horizon has moist color of 10YR 3/4. It is very strongly cemented or indurated by silica. The content of gravel is 5 to 60 percent. The content of organic matter is 0 to 0.2 percent. Redoximorphic features occur as manganese coatings with color of N 2/0. Reaction is neutral.

Redsluff Series

The Redsluff series consists of very deep, moderately well drained soils that formed in overbank alluvium over channel alluvium derived from dominantly volcanic rocks. These soils are on low fan terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 24 inches (610 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs

Typical Pedon

Redsluff gravelly loam, on a slope of less than 1 percent, under a cover of annual grasses, at an elevation of 184 feet (56 m). When described on 5/14/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Ap—0 to 2 inches (0 to 5 cm); light brown (7.5YR 6/3) gravelly loam, dark reddish brown (5YR 3/3) moist; 20 percent clay; weak medium subangular blocky structure parting to strong fine granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine and few fine roots; many fine to coarse vesicular and tubular pores; 25 percent gravel; noneffervescent; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt1—2 to 5 inches (5 to 13 cm); light brown (7.5YR 6/3) gravelly loam, dark reddish brown (5YR 3/3) moist; 24 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and few fine roots; common fine and medium tubular pores; common distinct

continuous clay films on faces of peds; 25 percent gravel; noneffervescent; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.

Bt2—5 to 12 inches (13 to 31 cm); brown (7.5YR 5/3) gravelly clay loam, dark reddish brown (5YR 3/3) moist; 28 percent clay; moderate medium subangular blocky structure; hard, very firm, moderately sticky, moderately plastic; common very fine and fine roots; many fine and medium tubular pores; many distinct continuous clay films on faces of peds; 15 percent gravel; noneffervescent; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.

Bt3—12 to 21 inches (31 to 53 cm); brown (7.5YR 5/3) gravelly loam, dark reddish brown (5YR 3/3) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine to medium tubular pores; many distinct continuous clay films throughout; 30 percent gravel; noneffervescent; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.

Bt4—21 to 29 inches (53 to 74 cm); light brown (7.5YR 6/3) gravelly loam, dark reddish brown (5YR 3/3) moist; 21 percent clay; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; many distinct continuous clay films on faces of peds; 25 percent gravel; noneffervescent; neutral, pH 6.8 by Hellige-Truog; clear wavy boundary.

Bt5—29 to 37 inches (74 to 94 cm); light brown (7.5YR 6/3) gravelly loam, brown (7.5YR 4/3) moist; 19 percent clay; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; many distinct continuous clay films on faces of peds and in pores; 25 percent gravel; noneffervescent; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bt6—37 to 42 inches (94 to 107 cm); light brown (7.5YR 6/3) extremely gravelly sandy loam, brown (7.5YR 4/3) moist; 15 percent clay; weak fine and medium subangular blocky structure; loose, nonsticky, nonplastic; common very fine and fine roots; many very fine and fine tubular pores; common faint continuous clay films on faces of peds; 40 percent gravel and 25 percent cobbles; noneffervescent; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

Cq—42 to 80 inches (107 to 203 cm); extremely gravelly loamy sand; 1 percent clay; single grain; loose, nonsticky, nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; common fine and medium irregular rigid silica concretions under rock fragments; 45 percent gravel and 35 percent cobbles; noneffervescent; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 0.38 mile east of the intersection of Keefer Road and Highway 99, approximately 1,160 feet north and 2,450 feet east of the southwest corner of sec. 30, T. 23 N., R. 1 E.; 39 degrees, 48 minutes, 51.9 seconds north latitude and 121 degrees, 54 minutes, 34.7 seconds west longitude; NAD83; USGS Quad: Nord, California.

Range in Characteristics

Depth to the extremely gravelly or coarser substratum is 35 to 65 inches (89 to 165 cm). The mean annual soil temperature is 63 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 180 days). The particle-size control section averages 25 to 35 percent clay and 2 to 25 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur at a depth of 35 to 80 inches (89 to 203 cm) from December through April. Rock fragments on the surface range from 0 to 15 percent gravel and 0 to 5 percent cobbles. Some pedons have a weakly cemented Bq horizon below a depth of 60 inches (152 cm).

The Ap horizon has dry color of 10YR 5/3, 5/4, 6/3, or 6/4 or 7.5YR 4/3, 4/4, 5/3, or 6/3. Moist color is 7.5YR 3/2 or 3/3, 5YR 3/3, or 10YR 3/2 or 3/3. Texture is loam or gravelly loam. The content of clay ranges from 16 to 24 percent. The content of gravel is 0 to 30 percent. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the Bt horizon has dry color of 7.5YR 5/3, 5/4, or 6/3 or 5YR 5/4. Moist color is 10YR 3/3 or 4/3; 7.5YR 3/2, 3/3, or 4/2; or 5YR 3/3 or 4/3. Texture is loam, clay loam, or the gravelly, cobbly, very gravelly, or very cobbly analogs of those textures. The content of clay ranges from 20 to 35 percent. The content of gravel is 5 to 30 percent, and the content of cobbles is 0 to 30 percent. Reaction ranges from slightly acid to slightly alkaline.

The lower part of the Bt horizon has dry color of 7.5YR 5/4, 6/3, or 6/4 or 5YR 5/4. Moist color is 7.5YR 4/3 or 4/4, 5YR 3/3 or 4/3, or 10YR 4/3. Texture is gravelly loam, extremely gravelly sandy loam, extremely gravelly coarse sandy loam, or extremely cobbly sandy loam. The content of clay ranges from 10 to 20 percent. The content of gravel is 25 to 70 percent, and the content of cobbles is 0 to 45 percent. Reaction is neutral or slightly alkaline.

The Cq horizon has dry color of 7.5YR 6/4 or 7/4. Moist color is 7.5YR 3/3 or 4/3 or 5YR 3/3. Texture is extremely gravelly loamy sand, extremely gravelly coarse sandy loam, or extremely cobbly coarse sandy loam. The content of clay ranges from 1 to 8 percent. The horizon has 10 to 50 percent gravel, 15 to 45 percent cobbles, and 0 to 5 percent stones. Reaction ranges from neutral to moderately alkaline.

Redsluff Taxadjunct

The Redsluff taxadjunct consists of very deep, moderately well drained soils that formed in alluvium derived from volcanic rocks. These soils are on stream terraces on Southern Cascade foothills. Slopes range from 0 to 2 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Redsluff taxadjunct clay loam, on a south-facing slope of 1 percent, under a cover of Mediterranean barley, yellow starthistle, ryegrass, soft chess, and red brome, at an elevation of 320 feet (98 meters). When described on 5/19/1999, the soil was dry to a depth of 10 inches (25 cm), very slightly moist from 10 to 68 inches (25 to 173 cm), and slightly moist from 68 to 80 inches (173 to 203 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 4 inches (0 to 10 cm); pale brown (10YR 6/3) clay loam, dark grayish brown (10YR 4/2) moist; 29 percent clay; moderate fine to coarse subangular blocky structure; rigid, friable, moderately sticky, moderately plastic; many very fine and fine roots; many very fine to medium tubular and irregular pores; 8 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt1—4 to 10 inches (10 to 25 cm); brown (10YR 5/3) sandy clay, dark grayish brown (10YR 4/2) moist; 40 percent clay; strong fine and medium subangular blocky structure; hard, friable, moderately sticky, very plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 2 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; gradual smooth boundary.

Bt2—10 to 21 inches (25 to 53 cm); brown (10YR 5/3) clay loam, dark grayish brown (10YR 4/2) moist; 36 percent clay; strong fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous

distinct clay films; 2 percent gravel; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.

Bt3—21 to 32 inches (53 to 81 cm); pale brown (10YR 6/3) sandy clay loam, dark grayish brown (10YR 4/2) moist; 32 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; common very fine and fine tubular pores; 80 percent continuous distinct clay films; 2 percent gravel; neutral, pH 6.9 by Hellige-Truog; gradual smooth boundary.

Bt4—32 to 42 inches (81 to 107 cm); very pale brown (10YR 7/3) sandy clay loam, dark grayish brown (10YR 4/2) moist; 30 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; common very fine and fine tubular pores; 60 percent discontinuous faint clay films; 2 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

2Bt5—42 to 53 inches (107 to 135 cm); pale brown (10YR 6/3) gravelly clay loam, brown (10YR 5/3) moist; 36 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; common very fine and fine tubular pores; 60 percent discontinuous distinct clay films; 15 percent gravel; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

2Bt6—53 to 68 inches (135 to 173 cm); very pale brown (10YR 8/3) extremely gravelly sandy clay loam, brown (10YR 5/3) moist; 30 percent clay; massive; slightly hard, friable, moderately sticky, moderately plastic; few very fine and fine roots; few very fine and fine tubular pores; 60 percent discontinuous distinct clay films; 15 percent cobbles and 40 percent gravel; slightly alkaline, pH 7.4 by Hellige-Truog; clear smooth boundary.

2Bt7—68 to 75 inches (173 to 191 cm); very pale brown (10YR 8/2) gravelly sandy clay loam, brown (10YR 5/3) moist; 23 percent clay; weak fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine and fine roots; few very fine and fine tubular pores; 60 percent discontinuous faint clay films; 10 percent cobbles and 20 percent gravel; slightly alkaline, pH 7.8 by Hellige-Truog; clear smooth boundary.

3Cr—75 inches (191 cm); extremely weakly cemented volcanic sandstone bedrock; few very fine and fine roots; few very fine and fine tubular pores; slightly alkaline, pH 7.8 by Hellige-Truog.

Type location: Butte County, California; about 0.25 mile northwest of the Clark Road Butte College entrance, approximately 150 feet north and 50 feet west of the southeast corner of sec. 21, T. 21 N., R. 3 E.; 39 degrees, 39 minutes, 17 seconds north latitude and 121 degrees, 38 minutes, 13 seconds west longitude; NAD83; USGS Quad: Hamlin Canyon, California.

Range in Characteristics

The depth to paralithic bedrock is 60 to 85 inches (152 to 216 centimeters). The mean annual soil temperature is 63 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 180 days). The particle-size control section averages 35 to 43 percent clay and 0 to 5 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the bedrock and 36 inches (91 cm) below the surface of the soil from December through April and can occur 60 inches (152 cm) below the surface in May and June. Redoximorphic features, such as oxidized iron masses and manganese masses, occur in the 2Bt and 3Cr horizons. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 3 percent cobbles.

The Ap horizon has dry color of 10YR 5/2, 6/2, or 6/3. Moist color is 10YR 3/2 or 4/2. Texture is clay loam. The content of clay ranges from 27 to 35 percent. The content of gravel is 0 to 10 percent. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 5/2, 5/3, 6/2, 6/3, 7/3, or 7/4. Moist color is 10YR 4/2, 4/3, or 5/4. Texture is clay loam, sandy clay loam, sandy clay, clay, gravelly clay loam, or gravelly sandy clay loam. The content of clay ranges from 27 to 45 percent. The content of gravel is 0 to 30 percent. Reaction ranges from slightly acid to slightly alkaline.

The 2Bt horizon has dry color of 10YR 6/3, 6/4, 7/3, 7/4, 8/2, or 8/3 or 2.5Y 7/1 or 7/2. Moist color is 10YR 4/3, 5/3, or 5/4 or 2.5Y 5/3. Texture is gravelly clay loam, gravelly sandy clay loam, very gravelly sandy clay loam, extremely gravelly sandy clay loam, gravelly coarse sandy loam, very gravelly loamy sand, extremely gravelly coarse sand, or extremely gravelly coarse sandy loam. The content of clay ranges from 2 to 36 percent. The horizon has 15 to 50 percent gravel and 0 to 25 percent cobbles. Reaction ranges from slightly acid to moderately alkaline.

The Redsluff taxadjunct is a taxadjunct because it has a fine particle-size control section and is lighter colored than is defined as the range for the series. These differences do not significantly affect the use, management, or interpretations of the soils.

Redswale Series

The Redswale series consists of very shallow, poorly drained soils that formed in alluvium derived from dominantly volcanic rocks. These soils are in swales on high fan terraces and strath terraces on Cascade foothills. Slopes range from 0 to 3 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic, shallow Typic Durixeralfs

Typical Pedon

Redswale cobbly loam, on a north-facing slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 277 feet (84 m). When described on 3/26/1997, the soil was dry to a depth of 1 inch (2.54 cm) and slightly moist from 1 to 7 inches (2.54 to 18 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 2.54 cm); reddish yellow (5YR 6/6) cobbly loam, dark reddish brown (2.5YR 3/4) moist; 19 percent clay; weak thin and medium platy structure parting to moderate fine subangular blocky; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots; common very fine vesicular and tubular pores; noneffervescent; 10 percent gravel and 15 percent cobbles; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

Bt—1 to 7 inches (2.54 to 18 cm); yellowish red (5YR 5/6) very cobbly loam, dark reddish brown (2.5YR 3/4) moist; 26 percent clay; moderate medium subangular blocky structure; moderately hard, firm, slightly sticky, slightly plastic; common very fine roots; common very fine vesicular and tubular pores; many distinct continuous clay films on rock fragments and on faces of peds; common fine irregular very dark gray (N 3/0) soft iron-manganese masses between peds; noneffervescent; 15 percent gravel and 25 percent cobbles; neutral, pH 6.7 by Hellige-Truog; abrupt irregular boundary.

Bqm—7 inches (18 cm); indurated duripan; $^{1}/_{16}$-inch (2-mm) manganese capping.

Type location: Butte County, California; about 0.5 mile north of Rock Creek Road and 2.3 miles east of Meridian Road, approximately 2,700 feet north and 2,000 feet east of the southwest corner of sec. 16, T. 23 N., R. 1 E.; 39 degrees, 50 minutes,

53.04 seconds north latitude and 121 degrees, 52 minutes, 26.5 seconds west longitude; NAD83; USGS Quad: Richardson Springs Southeast, California.

Range in Characteristics

Depth to the duripan is 4 to 10 inches (10 to 25 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 to 180 days). The particle-size control section averages 18 to 25 percent clay and 35 to 60 percent rock fragments, mostly cobbles. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and the surface of the soil from November through March. Redoximorphic features, such as iron-manganese masses, iron-manganese concretions, and iron masses, occur in A and Bt horizons. Layers of manganese surface coatings 1/16 to 1/8 inch (2 to 3 mm) thick occur on top of the duripan. Rock fragments on the surface range from 5 to 25 percent gravel, 0 to 40 percent cobbles, and 0 to 5 percent stones. Some pedons have an organic mat, 1/16 inch (2 mm) thick, on the surface.

The A horizon has dry color of 5YR 4/6, 5/6, or 6/6 or 7.5YR 5/4 or 6/4. Moist color is 5YR 3/2, 3/3, 3/4, or 4/3; 7.5YR 3/3; or 2.5YR 3/4. Texture is loam, gravelly loam, cobbly loam, or very cobbly loam. The content of clay ranges from 15 to 22 percent. The horizon has 2 to 20 percent gravel and 0 to 40 percent cobbles. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 5YR 5/6 or 6/4 or 7.5YR 4/4, 5/4, or 6/4. Moist color is 5YR 3/3, 4/3, or 4/4; 7.5YR 3/3; or 2.5YR 3/4. Texture is gravelly loam, very gravelly loam, cobbly loam, or very cobbly loam. The content of clay ranges from 18 to 27 percent. The horizon has 5 to 40 percent gravel and 0 to 35 percent cobbles. Reaction is slightly acid or neutral.

Redtough Series

The Redtough series consists of shallow, somewhat poorly drained soils that formed in alluvium derived from dominantly volcanic rocks. These soils are on mounds and risers on high fan terraces and strath terraces on Cascade foothills. Slopes range from 0 to 15 percent. The mean annual precipitation is about 24 inches (660 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy, mixed, superactive, thermic, shallow Typic Durixeralfs

Typical Pedon

Redtough loam, on a north-facing slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 278 feet (85 m). When described on 3/26/1997, the soil was dry to a depth of 1 inch (2.54 cm) and slightly moist from 1 to 13 inches (2.54 to 33 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 2.54 cm); reddish brown (5YR 5/4) loam, dark reddish brown (5YR 3/3) moist; 19 percent clay; moderate medium granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and common fine roots; many very fine vesicular and tubular pores; noneffervescent; 10 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt smooth boundary.

Bt1—1 to 7 inches (2.54 to 18 cm); yellowish red (5YR 5/6) gravelly loam, dark reddish brown (2.5YR 3/4) moist; 25 percent clay; moderate medium subangular blocky structure; moderately hard, firm, slightly sticky, slightly plastic; common very fine roots; common very fine vesicular and tubular pores; few faint patchy manganese or iron-manganese stains on faces of peds and many faint continuous clay films on rock fragments and on faces of peds; noneffervescent;

15 percent gravel and 5 percent cobbles; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt2—7 to 13 inches (18 to 33 cm); yellowish red (5YR 5/6) very cobbly loam, dark reddish brown (2.5YR 3/4) moist; 26 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots; many very fine and common fine vesicular and tubular pores; many faint continuous clay films on faces of peds and on rock fragments; noneffervescent; 10 percent gravel and 25 percent cobbles; slightly acid, by 6.5 Hellige-Truog; abrupt irregular boundary.

Bqm—13 inches (33 cm); indurated duripan; 1/8-inch (3-mm) manganese capping.

Type location: Butte County, California; about 0.5 mile north of Rock Creek Road and 2.3 miles east of Meridian Road, approximately 2,700 feet north and 2,000 feet east of the southwest corner of sec. 16, T. 23 N., R. 1 E.; 39 degrees, 50 minutes, 53.04 seconds north latitude and 121 degrees, 52 minutes, 25.9 seconds west longitude; NAD83; USGS Quad: Richardson Springs Southeast, California.

Range in Characteristics

Depth to the duripan is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May to November (150 to 180 days). The particle-size control section averages 18 to 27 percent clay and 5 to 35 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 2 inches (5 cm) below the surface of the soil from November through March. Redoximorphic features, such as oxidized iron masses and manganese masses, occur in the Bt horizon. Manganese surface coatings occur in layers 1/8 to 1/4 inch (3 to 5 mm) thick on top of the duripan. Some pedons have soft oxidized iron masses in the A horizon. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 10 percent cobbles. Some pedons have an organic crust, 1/16 inch (2 mm) thick, on the surface.

The A horizon has dry color of 5YR 4/6, 5/4, 5/6, or 6/6 or 7.5YR 5/4 or 6/4. Moist color is 7.5YR 3/3, 5YR 3/3 or 3/4, or 2.5YR 3/4. Texture is loam or gravelly loam. The content of clay ranges from 15 to 22 percent. The horizon has 0 to 35 percent gravel and 0 to 5 percent cobbles. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 5YR 4/6, 5/4, or 5/6 or 7.5YR 5/4 or 6/4. Moist color is 2.5YR 3/3 or 3/4; 5YR 3/3, 3/4, or 4/3; or 7.5YR 3/3. Texture is loam, gravelly loam, very gravelly loam, cobbly loam, or very cobbly loam. The content of clay ranges from 18 to 27 percent. The horizon has 5 to 40 percent gravel and 0 to 40 percent cobbles. Reaction is slightly acid or neutral.

Retsongulch Series

The Retsongulch series consists of moderately deep, well drained soils that formed in colluvium and residuum derived from coarse grained metamorphic rocks, mainly metadiorite. These soils are on canyon side slopes on metamorphic Sierra Nevada mountains. Slopes range from 50 to 100 percent. The mean annual precipitation is about 73 inches (1,854 mm), and the mean annual air temperature is about 52 degrees F (11 degrees C).

Taxonomic class: Loamy-skeletal, isotic, mesic Typic Haploxerults

Typical Pedon

Retsongulch very gravelly sandy loam, on an east-facing slope of 75 percent, under a cover of Douglas-fir, tanoak, ponderosa pine, canyon live oak, California black oak, sugar pine, incense cedar, and white fir, at an elevation of 3,300 feet (1,006 m). When

described on 8/10/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 3 inches (3 to 8 cm); pink (7.5YR 7/3) very gravelly sandy loam, brown (7.5YR 4/3) moist; 18 percent clay; moderate fine granular structure; soft, very friable, slightly sticky, nonplastic; many very fine and fine and few medium roots; many very fine to medium irregular and tubular pores; 5 percent cobbles and 30 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.7; clear smooth boundary.

Bt1—3 to 12 inches (8 to 30 cm); pink (7.5YR 7/4) very gravelly sandy clay loam, brown (7.5YR 5/4) moist; 23 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine to medium and few coarse roots; many very fine and fine and common medium tubular pores; 60 percent continuous distinct clay films; 5 percent stones, 10 percent cobbles, and 25 percent gravel; very strongly acid, pH 4.8 by Hellige-Truog; NaF pH 9.7; gradual smooth boundary.

Bt2—12 to 21 inches (30 to 53 cm); pink (7.5YR 7/4) extremely gravelly sandy clay loam, yellowish brown (10YR 5/6) moist; 20 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine to coarse roots; many very fine to medium tubular pores; 50 percent discontinuous faint clay films; 10 percent stones, 20 percent cobbles, and 35 percent gravel; very strongly acid, pH 4.8 by Hellige-Truog; NaF pH 9.5; gradual smooth boundary.

Bt3—21 to 30 inches (53 to 76 cm); very pale brown (10YR 8/4) extremely gravelly sandy loam, light yellowish brown (10YR 6/4) moist; 12 percent clay; weak fine subangular blocky structure; loose, nonsticky, nonplastic; many very fine to coarse roots; many very fine to medium tubular pores; 30 percent discontinuous faint clay films; 10 percent stones, 25 percent cobbles, and 35 percent gravel; very strongly acid, pH 4.8 by Hellige-Truog; NaF pH 9.5; clear wavy boundary.

R—30 inches (76 cm); strongly cemented metadiorite bedrock.

Type location: Butte County, California; about 0.7 mile east of Stirling City, approximately 1,275 feet south and 1,500 feet east of the northwest corner of sec. 27, T. 24 N., R. 4 E.; 39 degrees, 54 minutes, 43 seconds north latitude and 121 degrees, 31 minutes, 1 second west longitude; NAD83; USGS Quad: Stirling City, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 47 to 55 degrees F (8 to 13 degrees C). The particle-size control section averages 12 to 27 percent clay and 35 to 60 percent rock fragments, mostly gravel. Mineralogy is isotic. Rock fragments on the surface range from 15 to 80 percent gravel, 0 to 15 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 7.5YR 6/3, 6/4, or 7/3 or 10YR 5/3, 5/4, or 6/3. Moist color is 7.5YR 4/2, 4/3, or 4/4 or 10YR 3/2, 3/3, or 4/3. Texture is gravelly sandy loam, very gravelly sandy loam, loam, gravelly loam, or very gravelly loam. The content of clay ranges from 10 to 22 percent. The horizon has 5 to 40 percent gravel, 0 to 10 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 5/6, 6/4, 6/6, 7/4, or 7/6 or 10YR 6/4, 7/3, 7/4, or 8/4. Moist color is 7.5YR 4/4, 5/4, or 5/6 or 10YR 4/3, 4/4, 5/4, 5/6, or 6/4. Texture is gravelly sandy loam, very gravelly sandy loam, extremely gravelly sandy loam, gravelly loam, very gravelly loam, very gravelly sandy clay loam, or extremely

gravelly sandy clay loam. The content of clay ranges from 12 to 26 percent. The horizon has 25 to 50 percent gravel, 5 to 35 percent cobbles, 0 to 15 percent stones, and 0 to 10 percent boulders. Reaction ranges from very strongly acid to slightly acid.

Rockstripe Series

The Rockstripe series consists of very shallow, somewhat poorly drained soils that formed in residuum derived from volcanic mudflow breccia. These soils are on ridgetops and side slopes on Cascade foothills. Slopes range from 2 to 100 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 59 degrees F (15 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, nonacid, mesic Lithic Xerorthents

Typical Pedon

Rockstripe very gravelly loam, on a west-facing slope of 18 percent, under a cover of soft chess, hairy pink, wild oat, California brome, and scattered yellow starthistle, yerba santa, buckbrush, scrub oak, foothill pine, and manzanita, at an elevation of 1,280 feet (390 m). When described on 11/02/1998, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); light reddish brown (5YR 6/4) very gravelly loam, reddish brown (5YR 4/3) moist; 21 percent clay; moderate fine subangular blocky structure parting to moderate fine granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine to medium tubular and irregular and common coarse tubular pores; 5 percent stones, 5 percent cobbles, and 25 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt1—2 to 6 inches (5 to 15 cm); reddish brown (5YR 5/4) very cobbly loam, reddish brown (5YR 4/3) moist; 23 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; common very fine to medium tubular pores; 30 percent discontinuous faint clay films; 20 percent cobbles and 20 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; gradual smooth boundary.

Bt2—6 to 9 inches (15 to 24 cm); reddish brown (5YR 5/4) cobbly loam, reddish brown (5YR 4/3) moist; 25 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; common very fine to medium tubular pores; 50 percent discontinuous distinct clay films; 15 percent cobbles and 15 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; abrupt smooth boundary.

R—9 inches (24 cm); indurated mudflow breccia bedrock.

Type location: Butte County, California; about 0.2 mile west-southwest of the intersection of Highway 32 and Santos Road, approximately 600 feet south and 2,600 feet west of the northeast corner of sec. 2, T. 22 N., R. 2 E.; 39 degrees, 47 minutes, 51 seconds north latitude and 121 degrees, 43 minutes, 21 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to lithic bedrock is 2 to 10 inches (5 to 25 cm). The mean annual soil temperature is 55 to 59 degrees F (13 to 15 degrees C). The particle-size control section averages 17 to 27 percent clay and 35 to 75 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 5 to 30 percent gravel, 0 to 20 percent cobbles, 0 to 20 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 7.5YR 6/2, 6/3, or 6/4 or 5YR 6/4. Moist color is 7.5YR 3/2, 3/4, or 4/3 or 5YR 4/3. Texture is very gravelly loam, very gravelly sandy clay loam, or very gravelly sandy loam. The content of clay ranges from 15 to 25 percent. The horizon has 25 to 45 percent gravel, 0 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 5/4, 6/3, 6/4, or 7/3 or 5YR 5/4. Moist color is 7.5YR 3/4, 4/2, or 4/3 or 5YR 4/3. Texture is gravelly loam, very gravelly loam, cobbly loam, very cobbly loam, very gravelly sandy clay loam, or extremely stony sandy loam. The content of clay ranges from 17 to 27 percent. The horizon has 15 to 35 percent gravel, 0 to 30 percent cobbles, 0 to 30 percent stones, and 0 to 10 percent boulders. Reaction is slightly acid.

Rogerville Series

The Rogerville series consists of deep, well drained soils that formed in residuum and colluvium derived from ultramafic rocks, mainly talc schist. These soils are on ultramafic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 73 inches (1,854 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Fine, mixed, mesic Xeric Kanhaplohumults

Typical Pedon

Rogerville silt loam, on a southwest-facing slope of 12 percent, under a cover of mixed conifers, at an elevation of 3,975 feet (1,212 m). When described on 9/7/1995, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); slightly decomposed pine litter.

A—2 to 7 inches (5 to 18 cm); light brown (7.5YR 6/4) silt loam, reddish brown (5YR 4/4) moist; 23 percent clay; moderate fine and medium granular structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine and fine irregular, many medium irregular, and few coarse tubular pores; 5 percent subangular gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 9.4; clear smooth boundary.

Bt1—7 to 13 inches (18 to 33 cm); strong brown (7.5YR 5/6) silty clay loam, yellowish red (5YR 4/6) moist; 35 percent clay; strong fine angular blocky structure; slightly hard, very friable, moderately sticky, moderately plastic; many very fine and fine and common medium roots; many very fine and fine irregular, many medium irregular, and few coarse tubular pores; 75 percent discontinuous distinct clay films on faces of peds and in pores; 10 percent subangular gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 9.9; clear smooth boundary.

Bt2—13 to 24 inches (33 to 61 cm); strong brown (7.5YR 5/6) silty clay, yellowish red (5YR 4/6) moist; 40 percent clay; strong fine angular blocky structure; slightly hard, very friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine irregular, many medium irregular, and common medium tubular pores; 60 percent discontinuous distinct clay films on faces of peds and in pores; 15 percent subangular gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.4; clear smooth boundary.

Bt3—24 to 34 inches (61 to 86 cm); strong brown (7.5YR 5/8) gravelly silty clay loam, yellowish red (5YR 4/6) moist; 38 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common fine and medium and few very fine roots; many very fine and fine irregular and many medium tubular pores; 50 percent discontinuous distinct clay films on faces of peds and in pores; 5 percent subangular cobbles and 15 percent

subangular gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.4; clear smooth boundary.

Bt4—34 to 42 inches (86 to 107 cm); strong brown (7.5YR 5/8) gravelly clay loam, strong brown (7.5YR 5/6) moist; 35 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few fine roots; many fine tubular and many very fine and fine irregular pores; 35 percent discontinuous distinct clay films on faces of peds and in pores; 10 percent subangular cobbles and 25 percent subangular gravel; moderately acid, pH 5.8 by Hellige-Truog; abrupt smooth boundary.

Bt5—42 to 51 inches (107 to 130 cm); strong brown (7.5YR 5/8) extremely gravelly clay loam, strong brown (7.5YR 5/6) moist; 28 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common fine tubular and few very fine and fine irregular pores; 25 percent discontinuous distinct clay films on faces of peds and in pores; 20 percent subangular cobbles and 60 percent subangular gravel; moderately acid, pH 5.8 by Hellige-Truog; abrupt wavy boundary.

Cr—51 to 55 inches (130 to 140 cm); moderately cemented talc schist bedrock.

Type location: Butte County, California; about 4.2 miles northeast of Featherfalls, approximately 1,400 feet east and 100 feet north of the southwest corner of sec. 34, T. 21 N., R. 7 E.; 39 degrees, 37 minutes, 46 seconds north latitude and 121 degrees, 11 minutes, 6 seconds west longitude; NAD27; USGS Quad: Cascade, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The particle-size control section averages 36 to 50 percent clay and 0 to 20 percent rock fragments, mostly gravel. Mineralogy is mixed. By sum of cations, base saturation ranges from 20 to 35 percent to a depth of 13 inches (33 cm) and is less than 20 percent from 13 to 51 inches (33 to 130 cm). Calcium extractable bases exceed magnesium extractable bases throughout the profile.

The A horizon has dry color of 7.5YR 5/4 or 6/4 or 5YR 5/4, 5/6, or 6/4. Moist color is 7.5YR 4/4 or 5/3; 5YR 3/3, 3/4, 4/4, 4/6, or 5/6; or 2.5YR 3/4 or 4/6. Texture is silt loam, loam, or sandy loam. The content of clay ranges from 11 to 27 percent. The content of organic matter is 3 to 10 percent. The content of gravel is 5 to 15 percent. NaF pH is 9.4 to 11.5. Reaction ranges from very strongly acid to slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 5/6 or 5YR 5/4, 6/4, or 6/6. Moist color is 5YR 4/4 or 4/6 or 2.5YR 3/4, 4/4, or 4/6. Texture is silty clay loam, clay loam, gravelly silty clay loam, gravelly clay loam, or very gravelly clay loam. The content of clay ranges from 30 to 38 percent. The content of gravel is 10 to 50 percent. The content of organic matter is 3 to 10 percent. NaF pH is 9.5 to 9.9. Reaction is moderately acid or slightly acid.

The middle part of the Bt horizon has dry color of 7.5YR 5/6 or 5/8; 5YR 5/6, 5/8, or 6/6; or 2.5YR 5/6 or 6/6. Moist color is 7.5YR 5/6 or 5/8; 5YR 4/6, 5/6, or 5/8; or 2.5YR 3/6, 4/4, 4/6, 4/8, 5/6, or 6/6. Texture is silty clay, clay, silty clay loam, clay loam, gravelly clay loam, or gravelly silty clay loam. The content of clay ranges from 35 to 65 percent. The content of gravel is 0 to 35 percent, and the content of cobbles is 0 to 10 percent. The content of organic matter is 0.2 to 1 percent. NaF pH is 8.0 to 9.9. Reaction ranges from very strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 10YR 6/4 or 7/8, 7.5YR 7/8, or 5YR 6/6. Moist color is 10YR 5/4, 7.5YR 5/6 or 7/8, or 2.5YR 4/6 or 5/6. Texture is extremely gravelly clay loam, very gravelly silty clay loam, extremely gravelly silty clay loam, gravelly silty clay, silty clay, or silty clay loam. The content of clay ranges from 28 to 55 percent. The content of gravel is 5 to 80 percent, and the content of cobbles

is 0 to 20 percent. The content of organic matter is 0.2 to 0.5 percent. NaF pH is 8.8 to 9.9. Reaction ranges from very strongly acid to neutral.

Rogerville Taxadjunct

The Rogerville taxadjunct consists of deep, well drained soils that formed in tephra over residuum and colluvium derived from ultramafic rocks, mainly talc schist and soapstone. These soils are on ultramafic Sierra Nevada mountains. Slopes range from 30 to 50 percent. The mean annual precipitation is about 78 inches (1,981 mm), and the mean annual air temperature is about 47 degrees F (8 degrees C).

Taxonomic class: Fine-loamy, mixed, subactive, frigid Andic Haplohumults

Typical Pedon

Rogerville taxadjunct fine sandy loam, on a northwest-facing slope of 42 percent, under a cover of mixed conifers and shrubs, at an elevation of 5,180 feet (1,579 m). When described on 8/21/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oe—0 to 2 inches (0 to 5 cm); moderately decomposed plant material; abrupt smooth boundary.

A—2 to 4 inches (5 to 10 cm); reddish brown (5YR 5/4) fine sandy loam, dark reddish brown (5YR 3/3) moist; 10 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; few very fine roots; many very fine irregular pores; 5 percent soapstone gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.5; abrupt smooth boundary.

Bw1—4 to 7 inches (10 to 18 cm); reddish brown (5YR 5/4) gravelly sandy loam, dark reddish brown (5YR 3/4) moist; 15 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; few very fine tubular pores; 30 percent soapstone gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.5; clear smooth boundary.

Bw2—7 to 21 inches (18 to 53 cm); reddish brown (5YR 5/4) very gravelly sandy loam, dark reddish brown (5YR 3/4) moist; 18 percent clay; weak very fine subangular blocky structure; soft, friable, nonsticky, nonplastic; many very fine to medium roots; common very fine tubular pores; 5 percent soapstone cobbles and 40 percent soapstone gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.5; clear wavy boundary.

Bw3—21 to 26 inches (53 to 66 cm); brown (7.5YR 5/4) very gravelly loam, dark reddish brown (5YR 3/4) moist; 22 percent clay; moderate very fine subangular blocky structure; soft, friable, slightly sticky, slightly plastic; common very fine to medium roots; common very fine tubular pores; 10 percent soapstone cobbles and 40 percent soapstone gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 10.0; clear smooth boundary.

2Bt1—26 to 33 inches (66 to 84 cm); reddish yellow (7.5YR 7/6) gravelly silt loam, strong brown (7.5YR 5/6) moist; 24 percent clay; moderate fine subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; common very fine to medium roots; common very fine tubular pores; 5 percent discontinuous distinct clay films on surfaces along pores; 10 percent soapstone stones and 20 percent soapstone gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 8.8; gradual smooth boundary.

2Bt2—33 to 44 inches (84 to 112 cm); reddish yellow (7.5YR 7/6) gravelly silt loam, strong brown (7.5YR 5/6) moist; 26 percent clay; moderate fine subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; few fine to coarse roots; common very fine tubular pores; 5 percent discontinuous distinct clay films on surfaces along pores; 10 percent soapstone gravel and 10 percent

soapstone stones; very strongly acid, pH 5.0 by Hellige-Truog; NaF pH 8.8; gradual smooth boundary.

2Bt3—44 to 57 inches (112 to 145 cm); reddish yellow (7.5YR 7/6) gravelly silty clay loam, strong brown (7.5YR 5/6) moist; 28 percent clay; moderate fine subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; few fine to coarse roots; common very fine tubular pores; 5 percent discontinuous distinct clay films on surfaces along pores; 10 percent soapstone stones and 20 percent soapstone gravel; very strongly acid, pH 4.8 by Hellige-Truog; NaF pH 8.0; clear wavy boundary.

2Cr—57 inches (145 cm); moderately cemented soapstone bedrock.

Type location: Plumas County, California; about 1.5 miles north of Camel Peak Lookout, approximately 1,050 feet west and 600 feet south of the northeast corner of sec. 29, T. 22 N., R. 8 E.; 39 degrees, 44 minutes, 33 seconds north latitude and 121 degrees, 6 minutes, 12 seconds west longitude; NAD27; USGS Quad: American House, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The particle-size control section averages 25 percent clay and 24 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. The content of organic matter is 5 to 10 percent to a depth of 7 inches (18 cm) and is less than 5 percent from 7 to 57 inches (18 to 145 cm). By sum of cations, base saturation ranges from 10 to 25 percent throughout the profile. NaF pH is 10 to 11 to a depth of 5 to 24 inches (13 to 61 cm). Rock fragments on surface range from 0 to 10 percent gravel and 0 to 10 percent cobbles.

The A horizon has dry color of 5YR 5/4 or 7.5YR 4/3. Moist color is 5YR 3/3 or 7.5YR 3/3. Texture is fine sandy loam or sandy loam. The content of clay ranges from 8 to 12 percent. The content of gravel is 0 to 10 percent. Reaction ranges from very strongly acid to slightly acid.

The Bw horizon has dry color of 5YR 5/4 or 7.5YR 5/4. Moist color is 5YR 3/4. Texture is gravelly sandy loam, very gravelly sandy loam, or very gravelly loam. The content of clay ranges from 15 to 22 percent. The horizon has 20 to 40 percent gravel and 0 to 10 percent cobbles. Reaction ranges from strongly acid to slightly acid.

The 2Bt horizon has dry color of 7.5YR 6/6 or 7/6 or 5YR 5/6. Moist color is 7.5YR 4/6 or 5/6 or 5YR 3/4 or 4/6. Texture is gravelly silt loam or gravelly silty clay loam. The content of clay ranges from 24 to 28 percent. The horizon has 10 to 20 percent gravel, 0 to 10 percent cobbles, and 0 to 10 percent stones. Reaction is very strongly acid or strongly acid.

The Rogerville taxadjunct is a taxadjunct because it is frigid rather than mesic. This difference does not significantly affect the use, management, or interpretations of the soils.

Schott Series

The Schott series consists of deep, well drained soils that formed in residuum and colluvium derived from volcanic mudflow breccia. These soils are on ridgetops and side slopes in the Cascade Mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 71 inches (1,803 mm), and the mean annual air temperature is about 54 degrees F (12 degrees C).

Taxonomic class: Loamy-skeletal, mixed, semiactive, mesic Andic Haploxeralfs

Typical Pedon

Schott very gravelly loam, on an east-facing slope of 27 percent, under a cover of canyon live oak, ponderosa pine, California black oak, Douglas-fir, incense cedar, whiteleaf manzanita, Pacific poison oak, and California laurel, at an elevation of 2,940 feet (894 m). When described on 6/12/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); slightly decomposed plant material; few very fine roots; abrupt smooth boundary.

A—2 to 6 inches (5 to 15 cm); light brown (7.5YR 6/4) very gravelly loam, brown (7.5YR 4/3) moist; 24 percent clay; strong fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine to medium and common coarse tubular and irregular pores; 5 percent stones, 10 percent cobbles, and 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.5; abrupt smooth boundary.

Bt1—6 to 13 inches (15 to 33 cm); reddish brown (5YR 5/4) very gravelly clay loam, reddish brown (5YR 4/3) moist; 28 percent clay; moderate fine and medium granular structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium and common coarse roots; many very fine to medium and common coarse irregular and tubular pores; 80 percent continuous faint clay films; 5 percent stones, 10 percent cobbles, and 20 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; NaF pH 10.0; clear smooth boundary.

Bt2—13 to 22 inches (33 to 56 cm); reddish brown (5YR 5/4) very cobbly clay loam, reddish brown (5YR 4/4) moist; 30 percent clay; weak fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine to medium tubular pores; 80 percent continuous faint clay films; 10 percent stones, 20 percent gravel, and 30 percent cobbles; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.0; clear smooth boundary.

Bt3—22 to 40 inches (56 to 102 cm); reddish brown (5YR 5/4) extremely gravelly clay loam, reddish brown (5YR 4/4) moist; 32 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine to medium tubular pores; 80 percent continuous faint clay films; 10 stones, 30 percent cobbles, and 35 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; NaF pH 9.5; clear smooth boundary.

Bt4—40 to 50 inches (102 to 127 cm); brown (7.5YR 5/4) extremely gravelly sandy clay loam, brown (7.5YR 4/4) moist; 31 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous faint clay films; 10 percent stones, 30 percent cobbles, and 40 gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt smooth boundary.

R—50 inches (127 cm); strongly cemented mudflow breccia bedrock; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Butte County, California; about 1.25 miles east of Forest Ranch Cemetery, approximately 1,100 feet south and 300 feet west of the northeast corner of sec. 33, T. 24 N., R. 3 E.; 39 degrees, 53 minutes, 58 seconds north latitude and 121 degrees, 38 minutes, 13 seconds west longitude; NAD83; USGS Quad: Cohasset, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 52 to 59 degrees F (11 to 15 degrees C). The particle-size control

section averages 18 to 35 percent clay and 35 to 75 percent rock fragments, mostly gravel. Mineralogy is mixed. NaF pH is 9.5 to 11.0 to a depth of 20 inches (51 cm). Rock fragments on the surface range from 5 to 25 percent gravel, 0 to 15 percent cobbles, 0 to 15 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 7.5YR 6/3 or 6/4 or 5YR 6/4. Moist color is 7.5YR 3/3, 4/3, or 4/4 or 5YR 3/3 or 4/3. Texture is sandy loam, gravelly sandy loam, gravelly loam, or very gravelly loam. The content of clay ranges from 15 to 25 percent. The horizon has 5 to 35 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. NaF pH is 9.5 to 10.5. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 5/4, 5/6, 6/4, or 6/6; 5YR 5/4, 5/6, or 6/4; or 10YR 6/4. Moist color is 7.5YR 3/3, 4/3, 4/4, 4/6, 5/4, or 5/6 or 5YR 4/3 or 4/4. Texture is the gravelly, very gravelly, extremely gravelly, or very cobbly analogs of sandy loam, sandy clay loam, loam, or clay loam. The content of clay ranges from 18 to 35 percent. The horizon has 15 to 70 percent gravel, 0 to 30 percent cobbles, and 0 to 10 percent stones. NaF pH is 9.0 to 11.0. Reaction ranges from strongly acid to slightly acid.

Shakeridge Series

The Shakeridge series consists of very deep, well drained soils that formed in mixed tephra and colluvium and residuum weathered from Lovejoy basalt. These soils are on backslopes and side slopes on basalt ridges on volcanic Sierra Nevada mountains. Slopes range from 0 to 70 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Medial-skeletal, ferrihydritic, mesic Humic Haploxerands

Typical Pedon

Shakeridge gravelly medial coarse sandy loam, on a northwest-facing slope of 48 percent, under a cover of mixed conifers, at an elevation of 4,580 feet (1,396 m). When described on 12/17/1996, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); fresh and slightly decomposed litter of needles, leaves, and twigs.

A1—2 to 4 inches (5 to 10 cm); dark brown (10YR 3/3) gravelly medial coarse sandy loam, black (10YR 2/1) moist; 9 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots; common very fine irregular and common very fine vesicular pores; 30 percent subangular basalt gravel; slightly acid, pH 6.3 by pH meter 1.1 water; NaF pH 10.4; abrupt smooth boundary.

A2—4 to 7 inches (10 to 18 cm); dark brown (10YR 3/3) extremely gravelly medial coarse sandy loam, very dark brown (10YR 2/2) moist; 9 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine and fine roots; common irregular pores; 65 percent subangular basalt gravel; slightly acid, pH 6.4 by pH meter 1:1 water; NaF pH 10.5; abrupt smooth boundary.

Bw1—7 to 19 inches (18 to 48 cm); brown (10YR 4/3) extremely gravelly medial coarse sandy loam, dark brown (7.5YR 3/3) moist; 16 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine and fine and few medium roots; common irregular pores; 70 percent angular basalt gravel; slightly acid, pH 6.3 by pH meter 1:1 water; NaF pH 10.3; clear smooth boundary.

Bw2—19 to 25 inches (48 to 64 cm); brown (10YR 4/3) extremely gravelly medial coarse sandy loam, dark brown (7.5YR 3/2) moist; 16 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine and medium and few coarse roots; common irregular pores; 70 percent angular basalt gravel and 5 percent angular basalt cobbles; slightly acid, pH 6.5 by pH meter 1:1 water; NaF pH 10.3; gradual smooth boundary.

Bw3—25 to 36 inches (64 to 91 cm); brown (10YR 5/3) extremely gravelly medial coarse sandy loam, dark brown (7.5YR 3/2) moist; 18 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; few very fine and common fine to coarse roots; common irregular pores; 70 percent subangular basalt gravel and 5 percent subangular basalt cobbles; slightly acid, pH 6.1 by pH meter 1:1 water; NaF pH 10.3; gradual smooth boundary.

Bw4—36 to 55 inches (91 to 140 cm); brown (10YR 5/3) very gravelly medial coarse sandy loam, dark brown (7.5YR 3/2) moist; 18 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine to coarse roots; common irregular pores; 50 percent subangular basalt gravel and 5 percent subangular basalt cobbles; moderately acid, pH 6.0 by pH meter 1:1 water; NaF pH 10.4; gradual smooth boundary.

Bw5—55 to 71 inches (140 to 180 cm); brown (10YR 5/3) extremely gravelly medial coarse sandy loam, dark brown (7.5YR 3/2) moist; 18 percent clay; moderate fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine to coarse roots; common irregular pores; 55 percent subangular basalt gravel and 5 percent subangular basalt cobbles; slightly acid, pH 6.1 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.

Bw6—71 to 87 inches (180 to 221 cm); brown (10YR 5/3) extremely gravelly coarse sandy loam, dark brown (7.5YR 3/2) moist; 18 percent clay; weak very fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; common fine and medium roots; common irregular pores; 60 percent subangular basalt gravel and 5 percent subangular basalt cobbles; moderately acid, pH 5.9 by pH meter 1:1 water; NaF pH 10.5.

Type location: Plumas County, California; about 2.3 miles southeast of Cascade, approximately 1,250 feet north and 1,200 feet east of the southwest corner of sec. 13, T. 21 N., R. 7 E.; 39 degrees, 40 minutes, 29.7 seconds north latitude and 121 degrees, 8 minutes, 57.5 seconds west longitude; NAD83; USGS Quad: Cascade, California.

Range in Characteristics

The depth to lithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 47 to 54 degrees F (11 to 12 degrees C). The soil moisture control section is dry in all parts from about July to September (about 90 days). The particle-size control section averages 12 to 18 percent clay and 40 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is ferrihydritic. By ammonium acetate, base saturation is more than 50 percent throughout the profile. Acid oxalate extractable Al plus $^1/_2$ Fe ranges from 2.1 to 3.3 to a depth of 71 inches (180 cm). Rock fragments on the surface range from 10 to 20 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. Some pedons have paralithic contact of volcaniclastic material, tuff, or mudflow breccia below a depth of 60 inches (152 cm).

The A horizon has dry color of 10YR 3/2 or 3/3. Moist color is 10YR 2/1 or 2/2 or 7.5YR 2.5/2. Texture is gravelly medial coarse sandy loam, very gravelly medial sandy loam, or extremely gravelly medial sandy loam. The content of clay ranges from 5 to 12 percent. The horizon has 20 to 65 percent gravel and 5 to 20 percent cobbles. The content of organic matter is 5 to 12 percent. NaF pH is 10.4 to 11.5. Reaction is moderately acid or slightly acid.

The Bw horizon has dry color of 10YR 4/3 or 5/3. Moist color is 10YR 3/2 or 7.5YR 3/2, 3/3, or 4/4. Texture is extremely gravelly medial sandy loam, very gravelly medial sandy loam, very gravelly medial coarse sandy loam, extremely gravelly medial coarse sandy loam, extremely gravelly coarse sandy loam, extremely cobbly medial sandy loam, or extremely stony medial sandy loam. The content of clay ranges from 5 to 18 percent. The horizon has 10 to 70 percent gravel, 0 to 50 percent cobbles, and 0 to 70 percent stones. The content of organic matter is 1 to 3 percent. NaF pH is 10.3 to 11.0. Reaction ranges from very strongly acid to slightly acid.

Sites Series

The Sites series consists of deep or very deep, well drained soils that formed in material weathered from metamorphic rocks. These soils are on metamorphic Sierra Nevada mountains. Slopes range from 2 to 50 percent. The mean annual precipitation is about 65 inches (1,651 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine, parasesquic, mesic Xeric Haplohumults

Typical Pedon

Sites loam, 3 to 8 percent slopes. (Colors are for dry soil unless otherwise noted.)

Oi—4 inches to 0 (10 cm to 0); partially decomposed needles, leaves, twigs, and bark.

A—0 to 6 inches (0 to 15 cm); strong brown (7.5YR 4/6) loam, dark brown (7.5YR 3/4) moist; strong fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many fine and medium roots; many very fine irregular and tubular pores; slightly acid; clear smooth boundary.

Bt1—6 to 16 inches (15 to 41 cm); yellowish red (5YR 4/6) clay loam, yellowish red (5YR 4/6) moist; moderate medium subangular blocky structure; soft, very friable, sticky, slightly plastic; many fine and medium roots; common very fine irregular pores; common thin clay films on faces of peds; moderately acid; clear wavy boundary.

Bt2—16 to 27 inches (41 to 69 cm); yellowish red (5YR 4/6) clay, red (2.5YR 4/6) moist; moderate medium subangular blocky structure; soft, very friable, sticky, slightly plastic; many medium and coarse and common fine roots; common fine to coarse tubular pores; many thin clay films on faces of peds; moderately acid; gradual smooth boundary.

Bt3—27 to 40 inches (69 to 102 cm); red (2.5YR 4/6) clay, dark reddish brown (2.5YR 3/4) moist; strong medium subangular blocky structure; slightly hard, friable, sticky, slightly plastic; few fine and medium roots; common fine to coarse tubular pores; many thin clay films on faces of peds; moderately acid; gradual smooth boundary.

Bt4—40 to 51 inches (102 to 130 cm); red (2.5YR 4/6) clay, dark reddish brown (2.5YR 3/4) moist; strong medium subangular blocky structure; slightly hard, friable, sticky, slightly plastic; few fine and medium roots; common fine and medium tubular pores; many thin clay films on faces of peds; strongly acid; clear wavy boundary.

Bt5—51 to 61 inches (130 to 155 cm); reddish brown (2.5YR 4/4) clay loam, dark reddish brown (2.5YR 3/4) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common fine and medium roots; common fine and medium tubular pores; common thin clay films on faces of peds and in pores; strongly acid; clear irregular boundary.

Cr—61 to 71 inches (155 to 180 cm); mixed red (2.5YR 4/6) and strong brown (7.5YR 5/8), soft schist bedrock, tilted at about 60 degrees from horizontal.

Type location: Yuba County, California, in the town of Challenge, approximately 1,600 feet north and 800 feet east of the southeast corner of sec. 19, T. 19 N., R. 7 E.; 39 degrees, 29 minutes, 14 seconds north latitude and 121 degrees, 13 minutes, 28 seconds west longitude; NAD27; USGS Quad: Challenge, California.

Range in Characteristics

The depth to paralithic bedrock ranges from 40 to more than 80 inches (102 to more than 203 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July 15 to October 15 (about 95 days). Mineralogy is parasesquic. The content of organic matter is 2 to 10 percent to a depth of 5 inches (13 cm).

The A horizon has dry color of 7.5YR 5/4 or 4/6 or 5YR 4/4. Moist color is 7.5YR 3/4 or 5YR 3/4 or 3/3. Texture is loam, clay loam, or gravelly loam. The content of clay ranges from 15 to 27 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 5YR 4/6, 4/8, or 5/6 or 2.5YR 4/6, 4/4, 3/6, or 5/8. Moist color is 5YR 4/6 or 3/3 or 2.5YR 3/4, 3/6, or 4/6. Texture is clay loam, clay, gravelly clay loam, or gravelly clay. By weighted average, the content of clay in the control section ranges from 35 to 60 percent. The content of rock fragments is 0 to 30 percent. The content of organic carbon is 2 to 3 percent in the upper part of the horizon and 1 to 2 percent in the lower part. Base saturation ranges from 15 to 30 percent. Reaction is strongly acid or moderately acid.

Sites Taxadjunct

The Sites taxadjunct consists of very deep, well drained soils that formed in tephra deposited over colluvium and residuum derived from metasedimentary rocks. These soils are on metamorphic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 70 inches (1,778 mm), and the mean annual air temperature is about 52 degrees F (11 degrees C).

Taxonomic class: Fine, parasesquic, mesic Andic Palehumults

Typical Pedon

Sites taxadjunct gravelly loam, on a northwest-facing slope of 18 percent, under a cover of Sierra mixed conifers, at an elevation of 3,225 feet (983 m). When described on 6/4/2004, the soil was dry to a depth of 21 inches (53 cm) and moist from 21 to 72 inches (53 to 183 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 3 inches (3 to 8 cm); brown (7.5YR 5/3) gravelly loam, reddish brown (5YR 4/4) moist; 18 percent clay; strong fine granular structure; soft, very friable, nonsticky, slightly plastic; many very fine roots; many very fine irregular pores; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.0; abrupt smooth boundary.

BA—3 to 10 inches (8 to 25 cm); yellowish red (5YR 5/6) very gravelly loam, red (2.5YR 4/6) moist; 25 percent clay; moderate fine granular structure; soft, friable, slightly sticky, slightly plastic; common fine and medium and many very fine roots; many very fine irregular pores; 45 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 9.8; abrupt smooth boundary.

Bt1—10 to 21 inches (25 to 53 cm); yellowish red (5YR 5/6) gravelly silty clay, red (2.5YR 4/6) moist; 45 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common fine and medium and few coarse roots; common very fine tubular pores; 50 percent discontinuous distinct clay films on all faces of peds; 25 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; clear smooth boundary.

Bt2—21 to 34 inches (53 to 86 cm); reddish yellow (5YR 6/6) gravelly silty clay, red (2.5YR 5/6) moist; 50 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, very plastic; few medium and coarse roots; common very fine tubular pores; 60 percent continuous distinct clay films on all faces of peds; 20 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; gradual smooth boundary.

Bt3—34 to 59 inches (86 to 150 cm); reddish yellow (5YR 6/6) silty clay, red (2.5YR 5/6) moist; 55 percent clay; moderate medium subangular blocky structure parting to moderate fine subangular blocky; slightly hard, friable, slightly sticky, very plastic; few fine and medium roots; common very fine tubular pores; 90 percent continuous distinct clay films on all faces of peds; 10 percent gravel; slightly acid, pH 6.2 by Hellige-Truog; clear smooth boundary.

Bt4—59 to 72 inches (150 to 183 cm); reddish yellow (5YR 6/6) silty clay, red (2.5YR 5/6) moist; 45 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, very plastic; few fine and medium roots; common very fine tubular pores; 90 percent continuous distinct clay films on all faces of peds; 10 percent gravel; slightly acid, pH 6.2 by Hellige-Truog.

Type location: Butte County, California; about 0.3 mile northeast of the town of Feather Falls, approximately 1,900 feet west and 1,750 feet south of the northeast corner of sec. 13, T. 20 N., R. 6 E.; 39 degrees, 35 minutes, 44 seconds north latitude and 121 degrees, 14 minutes, 50 seconds west longitude; NAD83; USGS Quad: Clipper Mills, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 47 to 52 degrees F (8 to 11 degrees C). The particle-size control section averages 50 to 55 percent clay and 20 to 25 percent rock fragments, mostly gravel. Mineralogy is parasesquic. Acid-oxalate extractable Al plus $^1/_2$ Fe ranges from 1.5 to 1.0 percent (by weight) to a depth of 10 inches (25 cm). Rock fragments on the surface range from 0 to 15 percent gravel.

The A horizon has dry color of 7.5YR 5/3 or 5/4, 5YR 5/4 or 6/6, or 2.5YR 4/6. Moist color is 5YR 3/4 or 4/4, 7.5YR 3/3 or 3/4, or 2.5YR 3/4 or 4/6. Texture is gravelly loam, loam, sandy loam, or gravelly sandy loam. The content of clay ranges from 16 to 25 percent. The content of gravel is 0 to 25 percent. The content of organic matter is 10 to 14 percent. By sum of cations, base saturation ranges from 15 to 25 percent. By ammonium acetate, CEC ranges from 20 to 30. NaF pH is 10.0 to 11.0. Reaction is moderately acid or slightly acid.

The BA horizon has dry color of 5YR 5/6 or 2.5YR 4/6. Moist color is 2.5YR 3/6 or 4/6 or 5YR 3/3, 3/4, or 4/4. Texture is gravelly loam, very gravelly loam, loam, or clay loam. The content of clay ranges from 19 to 30 percent. The content of gravel is 0 to 45 percent. The content of organic matter is 4 to 8 percent. By sum of cations, base saturation ranges from 10 to 20 percent. By ammonium acetate, CEC ranges from 12 to 20. NaF pH is 9.8 to 11.0. Reaction ranges from strongly acid to slightly acid.

The Bt horizon has dry color of 5YR 5/6, 5/8, or 6/6 or 7.5YR 6/8 or 7/8. Moist color is 2.5YR 3/6, 4/6, 4/8, or 5/6; 7.5YR 5/8, 6/8, or 7/8; or 5YR 5/8. Texture is gravelly silty clay, silty clay, clay, or clay loam. The content of clay ranges from 38 to 55 percent. The content of gravel is 0 to 25 percent. The content of organic matter is 3 to 0.3 percent. By sum of cations, base saturation ranges from 2 to 20 percent. By ammonium acetate, CEC ranges from 9 to 12. NaF pH is 8.8 to 10.0. Reaction ranges from very strongly acid to slightly acid.

The Sites taxadjunct is a taxadjunct because it has andic soil material on the surface and its content of clay does not decrease by 30 percent from the maximum amount in the argillic horizon. These differences do not significantly affect the use, management, or interpretations of the soils.

Slideland Series

The Slideland series consists of very deep, well drained soils that formed in colluvium and alluvium derived from mixed rock sources. These soils are in areas of landslide deposits and terraces in canyons on Cascade foothills. Slopes range from 3 to 50 percent. The mean annual precipitation is about 40 inches (1,016 mm), and the mean annual air temperature is about 58 degrees F (14 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Haplic Palexeralfs

Typical Pedon

Slideland gravelly loam, on a west-facing slope of 11 percent, under a cover of annual grasses and forbs with some scattered blue oak and whiteleaf manzanita, at an elevation of 620 feet (189 m). When described on 7/8/1999, the soil was dry to a depth of 38 inches (97 cm) and very slightly moist from 38 to 80 inches (97 to 203 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 23 percent clay; moderate medium platy structure parting to moderate fine and medium granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots; common very fine to medium irregular and tubular pores; 15 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; abrupt smooth boundary.

Bt1—2 to 9 inches (5 to 23 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 25 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and few medium roots; common very fine and fine and few medium tubular pores; 70 percent continuous distinct clay films on surfaces along pores; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt2—9 to 14 inches (23 to 36 cm); light brown (7.5YR 6/4) gravelly clay loam, brown (7.5YR 4/3) moist; 28 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and fine and few medium roots; many very fine to medium tubular pores; 70 percent continuous distinct clay films on surfaces along pores; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt3—14 to 21 inches (36 to 53 cm); light reddish brown (5YR 6/4) gravelly clay loam, reddish brown (5YR 4/3) moist; 31 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and fine and few medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films on surfaces along pores; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt4—21 to 28 inches (53 to 71 cm); light reddish brown (5YR 6/4) gravelly clay loam, reddish brown (5YR 4/3) moist; 34 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine to coarse roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films on surfaces along pores; 15 percent gravel; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.

Bt5—28 to 38 inches (71 to 97 cm); light reddish brown (5YR 6/4) gravelly clay loam, reddish brown (5YR 4/3) moist; 36 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films on surfaces along pores; 15 percent gravel; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.

Bt6—38 to 51 inches (97 to 130 cm); light reddish brown (5YR 6/4) gravelly clay loam, reddish brown (5YR 4/3) moist; 37 percent clay; moderate fine and medium

subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few very fine to coarse roots; many very fine and fine and few medium tubular pores; 80 percent continuous distinct clay films on surfaces along pores; 5 percent cobbles and 10 percent gravel; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.

Bt7—51 to 69 inches (130 to 175 cm); light reddish brown (5YR 6/4) very cobbly clay loam, reddish brown (5YR 4/3) moist; 39 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, very sticky, very plastic; few very fine to medium roots; common very fine and fine tubular pores; 100 percent continuous distinct clay films on surfaces along pores; 5 percent stones, 15 percent gravel, and 15 percent cobbles; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.

Bt8—69 to 80 inches (175 to 203 cm); light brown (7.5YR 6/4) very cobbly clay loam, brown (7.5YR 4/3) moist; 38 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, very sticky, very plastic; few very fine to medium roots; common very fine and fine tubular pores; 80 percent continuous distinct clay films on surfaces along pores; 15 percent medium distinct irregular iron-manganese masses that have clear boundaries and are between peds; 5 percent stones, 20 percent cobbles, and 20 percent gravel; neutral, pH 6.8 by Hellige-Truog.

Type location: Butte County, California; about 2.4 miles south-southwest of Centerville, approximately 2,400 feet east and 1,000 feet south of the northwest corner of sec. 20, T. 22 N., R. 3 E.; 39 degrees, 45 minutes, 11 seconds north latitude and 121 degrees, 39 minutes, 56 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The particle-size control section averages 25 to 35 percent clay and 5 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders. In some pedons the clay content ranges from 20 to 35 percent in the lower part of the Bt horizon.

The A horizon has dry color of 7.5YR 5/3, 6/3, or 6/4. Moist color is 7.5YR 4/2, 4/3, or 4/4 or 5YR 4/3. Texture is loam, gravelly loam, fine sandy loam, or very fine sandy loam. The content of clay ranges from 18 to 27 percent. The content of gravel is 2 to 30 percent. Reaction is slightly acid or neutral.

The upper part of the Bt horizon has dry color of 7.5YR 5/3, 5/4, 6/3, 6/4, 6/6, or 7/4 or 5YR 5/4 or 6/4. Moist color is 7.5YR 4/3 or 4/4 or 5YR 4/3 or 4/4. Texture is loam, gravelly loam, clay loam, gravelly clay loam, cobbly clay loam, silt loam, or silty clay loam. The content of clay ranges from 20 to 35 percent. The content of gravel is 5 to 30 percent, the content of cobbles is 0 to 10 percent, and the content of stones is 0 to 5 percent. Reaction ranges from moderately acid to neutral.

The lower part of the Bt horizon has dry color of 7.5YR 4/4, 5/4, 6/4, or 7/4 or 5YR 4/6, 5/4, or 6/4. Moist color is 7.5YR 4/3, 4/4, or 5/4 or 5YR 4/4 or 4/4. Texture is clay loam, gravelly clay loam, cobbly clay loam, very cobbly clay loam, silty clay loam, very gravelly silty clay loam, very cobbly silty clay loam, clay, gravelly clay, cobbly clay, silty clay, or gravelly silty clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 5 to 30 percent, the content of cobbles is 0 to 25 percent, and the content of stones is 0 to 5 percent. Reaction ranges from slightly acid to slightly alkaline.

Sobrante Series

The Sobrante series consists of moderately deep, well drained soils that formed in material weathered from basic metavolcanic rocks. These soils are on metavolcanic Sierra Nevada foothills. Slopes range from 3 to 75 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Mollic Haploxeralfs

Typical Pedon

Sobrante loam, on a slope of 3 to 8 percent. (Colors are for dry soil unless otherwise noted.)

A—0 to 5 inches (0 to 13 cm); brown (7.5YR 4/4) loam, dark brown (7.5YR 3/4) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and fine irregular pores; 5 percent gravel; slightly acid; clear smooth boundary.

Bt1—5 to 11 inches (13 to 28 cm); dark reddish brown (5YR 3/4) loam, dark reddish brown (5YR 3/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine to medium tubular pores; few thin clay films on faces of peds and in pores; 5 percent gravel; slightly acid; gradual smooth boundary.

Bt2—11 to 19 inches (28 to 48 cm); dark reddish brown (5YR 3/4) loam, dark reddish brown (5YR 3/4) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few fine and common medium roots; common very fine and fine tubular pores; common thin clay films on faces of peds and in pores; 5 percent gravel; slightly acid; gradual smooth boundary.

Bt3—19 to 27 inches (48 to 69 cm); strong brown (7.5YR 5/6) loam, dark brown (7.5YR 3/4) moist; weak fine subangular blocky structure; hard, firm, slightly sticky, slightly plastic; few fine and common medium roots; few fine tubular pores; common moderately thick clay films on faces of peds and in pores; 5 percent gravel; slightly acid; abrupt wavy boundary.

Cr—27 to 39 inches (69 to 99 cm); yellowish brown (10YR 5/8), weathered greenstone bedrock; soft in the upper part, becoming increasingly hard with increasing depth; common fine and coarse roots; gradual wavy boundary.

R—39 inches (99 cm); hard, very fractured greenstone bedrock.

Type location: Yuba County, California; about 4.2 miles northeast of Camp Far West Reservoir Dam, approximately 1,650 feet north and 1,450 feet west of the southeast corner of sec. 34, T. 15 N., R. 6 E.; 39 degrees, 6 minutes, 20 seconds north latitude and 121 degrees, 17 minutes, 19 seconds west longitude; NAD27; USGS Quad: Camp Far West, California.

Range in Characteristics

The depth to lithic bedrock ranges from 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 64 degrees F (15 to 18 degrees C). The particle-size control section ranges from 25 to 35 percent clay. Mineralogy is mixed. The content of organic matter is 1 to 3 percent to a depth of 5 inches (13 cm).

The A horizon has dry color of 7.5YR 5/4 or 4/4. Moist color is 7.5YR 4/4 or 3/4. Texture is gravelly loam or loam. The content of clay ranges from 10 to 25 percent. The horizon has 3 to 25 percent gravel and 0 to 5 percent cobbles. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 5/6 or 5YR 4/6, 4/4, 3/6, or 3/4. Moist color is 7.5YR 3/4 or 5YR 3/4 or 4/4. Texture is gravelly clay loam, gravelly loam, loam, or clay loam. The content of clay ranges from 25 to 35 percent. The horizon has 3 to 25

percent gravel and 0 to 5 percent cobbles. Reaction is moderately acid or slightly acid.

Sommeyflat Series

The Sommeyflat series consists of very deep, well drained soils that formed in residuum and colluvium derived from metavolcanic rocks and intrusive igneous rocks, mainly gabbro and quartz diorite. These soils are on side slopes and ridgetops on plutons on Sierra Nevada foothills. Slopes range from 2 to 50 percent. The mean annual precipitation is about 40 inches (1,016 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Sommeyflat loam, on an east-facing slope of 5 percent, under a cover of annual grasses and forbs, at an elevation of 1,950 feet (594 m). When described on 5/29/2002, the soil was dry to a depth of 2 inches (5 cm) and slightly moist from 2 to more than 70 inches (5 to 178 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); strong brown (7.5YR 5/6) loam, dark brown (7.5YR 3/4) moist; 19 percent clay; weak very fine and fine subangular blocky structure; soft, very friable, nonsticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; slightly acid, pH 6.2 by Hellige-Truog; abrupt smooth boundary.

BA—2 to 9 inches (5 to 23 cm); strong brown (7.5YR 4/6) loam, dark brown (7.5YR 3/4) moist; 21 percent clay; weak very fine and fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; 2 percent subangular gravel; slightly acid, pH 6.2 by Hellige-Truog; clear smooth boundary.

Bt1—9 to 14 inches (23 to 36 cm); strong brown (7.5YR 5/6) loam, dark brown (7.5YR 3/4) moist; 24 percent clay; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots; many very fine and fine and common medium tubular pores; 5 percent patchy distinct clay films on faces of peds; 2 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.

Bt2—14 to 24 inches (36 to 61 cm); yellowish red (5YR 4/6) loam, dark reddish brown (5YR 3/4) moist; 26 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; many very fine roots; very fine to medium tubular pores; 10 percent patchy distinct clay films on faces of peds; slightly acid, pH 6.4 by Hellige-Truog; clear wavy boundary.

BCt—24 to 31 inches (61 to 79 cm); yellowish red (5YR 5/6) loam, dark reddish brown (5YR 3/4) moist; 24 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; 10 percent patchy distinct clay films on faces of peds; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

C1—31 to 62 inches (79 to 157 cm); brownish yellow (10YR 6/6) loam, dark yellowish brown (10YR 4/6) moist; 19 percent clay; weak very fine and fine subangular blocky structure; soft, very friable, nonsticky, slightly plastic; few very fine roots; common very fine and fine tubular pores; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

C2—62 to 70 inches (157 to 178 cm); yellowish brown (10YR 5/6) loam, dark yellowish brown (10YR 4/4) moist; 16 percent clay; weak very fine and fine subangular blocky structure; soft, very friable, nonsticky, slightly plastic; common very fine and fine tubular pores; neutral, pH 6.9 by Hellige-Truog.

Type location: Butte County, California; about 2.2 miles north of Rackerby, approximately 900 feet north and 1,150 feet west of the southeast corner of sec. 30, T. 19 N., R. 6 E.; 39 degrees, 28 minutes, 15.60 seconds north latitude and 121 degrees, 20 minutes, 15.97 seconds west longitude; NAD83; USGS Quad: Rackerby, California.

Range in Characteristics

The depth to paralithic bedrock is 60 to 80 inches or more (152 to 203 cm). The mean annual soil temperature is 59 to 63 degrees F (16 to 17 degrees C). The soil moisture control section is dry in all parts from about June through October (about 165 days). The particle-size control section averages 22 to 29 percent clay and 2 to 15 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 2 percent gravel. Some pedons have a BAt horizon.

The A horizon has dry color of 7.5YR 4/4, 4/6, or 5/6 or 10YR 4/4 or 6/3. Moist color is 7.5YR 3/3, 3/4, or 4/6 or 10YR 3/3 or 3/4. Texture is loam or gravelly loam. The content of clay ranges from 15 to 20 percent. The content of gravel is 0 to 20 percent. By sum of cations, base saturation ranges from 50 to 70 percent. The content of organic matter is 4 to 8 percent. Reaction is slightly acid or neutral.

The BA horizon has dry color of 7.5YR 4/6 or 5/6, 10YR 4/4 or 6/3, or 5YR 4/6. Moist color is 7.5YR 3/4, 5YR 3/4, or 10YR 3/3. Texture is loam or gravelly loam. The content of clay ranges from 14 to 21 percent. The horizon has 0 to 20 percent gravel and 0 to 5 percent cobbles. By sum of cations, base saturation ranges from 45 to 65 percent. The content of organic matter is 1 to 4 percent. Reaction is slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 4/4, 4/6, 5/6, or 6/4; 5YR 4/6; or 2.5YR 5/6. Moist color is 7.5YR 3/4, 5YR 4/4, or 2.5YR 4/6. Texture is loam or clay loam. The content of clay ranges from 18 to 30 percent. The content of gravel is 0 to 10 percent. By sum of cations, base saturation ranges from 55 to 74 percent. The content of organic matter is 0.4 to 1.5 percent. Reaction is slightly acid.

The lower part of the Bt horizon has dry color of 7.5YR 4/6, 5/6, or 6/4; 5YR 4/6, 5/6, or 6/4; or 2.5YR 4/6. Moist color is 7.5YR 3/4, 4/3, 4/4, or 4/6; 5YR 3/4, 4/4, or 4/6; or 2.5YR 4/4. Texture is loam, clay loam, or gravelly clay loam. The content of clay ranges from 22 to 33 percent. The content of gravel is 0 to 15 percent, and the content of cobbles is 0 to 2 percent. By sum of cations, base saturation ranges from 75 to 85 percent. The content of organic matter is 0.2 to 1.0 percent. Reaction is slightly acid or neutral.

The BCt horizon has dry color of 7.5YR 5/8 or 6/8; 10YR 5/3, 5/4, or 6/4; 5YR 5/6; or 2.5YR 5/6. Moist color is 7.5YR 4/6 or 5/6; 10YR 3/4, 4/3, 4/4, or 5/4; 5YR 3/4; or 2.5YR 4/6. Texture is loam or clay loam. The content of clay ranges from 18 to 30 percent. The content of gravel is 0 to 10 percent. The content of organic matter is 0 to 0.5 percent. Reaction is slightly acid.

The C horizon has dry color of 7.5YR 6/6 or 10YR 5/6 or 6/6. Moist color is 7.5YR 4/6 or 10YR 4/4 or 4/6. Texture is loam or gravelly fine sandy loam. The content of clay ranges from 16 to 22 percent. The content of gravel is 0 to 25 percent. Reaction is slightly acid or neutral.

Spine Series

The Spine series consists of shallow, well drained soils that formed in residuum and colluvium derived from metasedimentary and metavolcanic rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 64 inches (1,626 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, mesic Lithic Haploxerults

Typical Pedon

Spine very gravelly loam, on a north-facing slope of 35 percent, under a cover of tanoak, sugar pine, Douglas-fir, and whiteleaf manzanita, at an elevation of 3,240 feet (988 m). When described on 7/15/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 3 inches (3 to 8 cm); pink (7.5YR 7/3) very gravelly loam, brown (7.5YR 5/3) moist; 20 percent clay; moderate fine and medium granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine to medium roots; common fine and medium tubular and many very fine irregular and tubular pores; 5 percent cobbles and 30 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.0; clear smooth boundary.

Bt1—3 to 9 inches (8 to 23 cm); pink (7.5YR 8/4) extremely gravelly loam, reddish yellow (7.5YR 6/6) moist; 27 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine to medium and few coarse roots; many very fine to medium tubular pores; 70 percent distinct clay films; 5 percent cobbles and 60 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.2; clear smooth boundary.

Bt2—9 to 16 inches (23 to 41 cm); reddish yellow (7.5YR 7/6) extremely gravelly clay loam, reddish yellow (7.5YR 6/6) moist; 29 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common very fine to medium roots; common very fine and fine tubular pores; 30 percent continuous distinct clay films; 5 percent cobbles and 70 percent gravel; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 9.2; gradual wavy boundary.

R—16 inches (41 cm); indurated metasedimentary bedrock; few very fine to medium roots.

Type location: Butte County, California; about 2.2 miles northeast of Sawmill Peak, approximately 1,700 feet north and 1,600 feet west of the southeast corner of sec. 21, T. 23 N., R. 4 E.; 39 degrees, 50 minutes, 5 seconds north latitude and 121 degrees, 31 minutes, 40 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to lithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 50 to 57 degrees F (10 to 14 degrees C). The particle-size control section averages 17 to 35 percent clay and 35 to 75 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 20 to 60 percent gravel, 0 to 20 percent cobbles, 0 to 15 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 10YR 6/3, 6/4, or 7/4 or 7.5YR 6/4 or 7/3. Moist color is 7.5YR 3/3, 4/3, 4/4, 4/6, 5/3, or 5/4 or 10YR 4/3, 4/4, or 5/4. Texture is gravelly loam, very gravelly loam, gravelly sandy loam, or very gravelly sandy loam. The content of clay ranges from 12 to 22 percent. The horizon has 25 to 60 percent gravel and 0 to 5 percent cobbles. Reaction ranges from very strongly acid to slightly acid.

The Bt horizon has dry color of 7.5YR 6/4, 6/6, 7/4, 7/6, or 8/4; 10YR 6/4 or 7/4; or 5YR 5/6. Moist color is 7.5YR 4/3, 4/4, 5/4, 5/6, or 6/6; 10YR 4/4, 5/6, or 5/8; or 5YR 4/4 or 4/6. Texture is gravelly loam, very gravelly loam, extremely gravelly loam, gravelly clay loam, very gravelly clay loam, extremely gravelly clay loam, gravelly sandy loam, or very gravelly sandy loam. The content of clay ranges from 15 to 35 percent. The horizon has 30 to 70 percent gravel and 0 to 15 percent cobbles. Reaction ranges from very strongly acid to slightly acid.

Spine Taxadjunct

The Spine taxadjunct consists of shallow, well drained soils that formed in residuum and colluvium derived from metavolcanic rocks. These soils are on backslopes in metamorphic Sierra Nevada canyons and mountains. Slopes range from 30 to 70 percent. The mean annual precipitation is about 56 inches (1,422 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, mesic Lithic Haploxeralfs

Typical Pedon

Spine taxadjunct very cobbly loam, on a northeast-facing slope of 42 percent, under a cover of Douglas-fir, canyon live oak, California black oak, Pacific madrone, toyon, and manzanita, at an elevation of 1,965 feet (599 m). When described on 11/20/2001, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); reddish yellow (7.5YR 6/6) very cobbly loam, brown (7.5YR 4/4) moist; 25 percent clay; moderate fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine to coarse tubular and irregular pores; 20 percent cobbles and 20 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bt—2 to 15 inches (5 to 38 cm); reddish yellow (7.5YR 6/6) very cobbly clay loam, reddish brown (5YR 4/4) moist; 30 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to coarse and common very coarse roots; many very fine to coarse tubular and irregular pores; 70 percent continuous distinct clay films; 20 percent gravel and 30 percent cobbles; slightly acid, pH 6.4 by Hellige-Truog; abrupt wavy boundary.

R—15 inches (38 cm); indurated metavolcanic bedrock.

Type location: Butte County, California; about 0.68 mile east of Jarbo Gap, approximately 1,200 feet south and 600 feet east of the northwest corner of sec. 25, T. 22 N., R. 4 E.; 39 degrees, 44 minutes, 15 seconds north latitude and 121 degrees, 29 minutes, 3 seconds west longitude; NAD83; USGS Quad: Berry Creek, California.

Range in Characteristics

The depth to bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 53 to 59 degrees F. The soil moisture control section is dry in all parts from about June to October (about 150 days). The particle-size control section averages 20 to 35 percent clay and 35 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 25 to 80 percent gravel, 5 to 30 percent cobbles, 0 to 20 percent stones, and 0 to 20 percent boulders.

The A horizon has dry color of 7.5YR 6/6 or 7/6 or 5YR 5/4 or 6/4. Moist color is 7.5YR 4/3 or 4/4 or 5YR 3/3 or 4/3. Texture is gravelly loam, very gravelly loam, extremely gravelly loam, cobbly loam, very cobbly loam, extremely cobbly loam, or stony loam. The content of clay ranges from 18 to 27 percent. The horizon has 15 to 60 percent gravel, 10 to 35 percent cobbles, 0 to 20 percent stones, and 0 to 15 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 6/6 or 5YR 6/6. Moist color is 5YR 4/3, 4/4, or 4/6. Texture is very gravelly loam, extremely gravelly loam, very cobbly loam, extremely cobbly loam, very gravelly clay loam, extremely gravelly clay loam, very cobbly clay loam, extremely cobbly clay loam, very stony loam, very stony clay loam, extremely stony loam, or extremely stony clay loam. The content of clay ranges from 22 to 35 percent. The horizon has 15 to 60 percent gravel, 20 to 40 percent cobbles,

0 to 30 percent stones, and 0 to 15 percent boulders. Reaction is slightly acid or neutral.

The Spine taxadjunct is a taxadjunct because the base saturation, by sum of cations, is more than 35 percent, which is higher than is defined as the range for the series. The main limitation is the shallow depth to bedrock. This difference does not significantly affect the use, management, or interpretations of the soils.

Stagpoint Series

The Stagpoint series consists of very deep, well drained soils that formed in tephra-influenced colluvium and residuum derived from metamorphic rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 78 inches (1,981 mm), and the mean annual air temperature is about 49 degrees F (9 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, frigid Andic Haplohumults

Typical Pedon

Stagpoint loam, on a west-facing slope of 12 percent, under a cover of white fir, red fir, and shrubs, at an elevation of 5,325 feet (1,623 m). When described on 7/29/1997, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); needles and twigs.

A—0.5 inch to 4 inches (1 to 10 cm); brown (7.5YR 5/4) loam, dark brown (7.5YR 3/3) moist; 16 percent clay; weak fine subangular blocky structure parting to single grain; loose, very friable, nonsticky, nonplastic; common very fine roots; many very fine irregular pores; 10 percent gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 10.8; abrupt smooth boundary.

Bt1—4 to 10 inches (10 to 25 cm); light brown (7.5YR 6/4) gravelly loam, dark brown (7.5YR 3/3) moist; 14 percent clay; weak medium subangular blocky structure parting to single grain; slightly hard, very friable, nonsticky, slightly plastic; common very fine to medium roots; common very fine tubular pores; few faint discontinuous clay films between sand grains; 18 percent gravel; moderately acid, pH 5.7 by Hellige-Truog; NaF pH 10.9; abrupt smooth boundary.

Bt2—10 to 17 inches (25 to 43 cm); pink (7.5YR 7/4) very gravelly loam, brown (7.5YR 4/4) moist; 20 percent clay; weak medium subangular blocky structure parting to single grain; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium and few coarse roots; few very fine tubular pores; few faint discontinuous clay films between sand grains; 30 percent gravel and 15 percent cobbles; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 10.3; clear smooth boundary.

2Bt3—17 to 23 inches (43 to 58 cm); yellow (10YR 7/6) very gravelly loam, yellowish brown (10YR 5/6) moist; 22 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; few fine to coarse roots; common very fine and few medium tubular pores; few distinct discontinuous clay films in pores; 40 percent gravel and 15 percent cobbles; strongly acid, pH 5.3 by Hellige-Truog; NaF pH 9.6; gradual smooth boundary.

2Bt4—23 to 34 inches (58 to 86 cm); very pale brown (10YR 7/4) extremely cobbly loam, yellowish brown (10YR 5/6) moist; 18 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine to coarse roots; common very fine and few medium tubular pores; few distinct discontinuous clay films in pores; 30 percent gravel, 40 percent cobbles, and 5 percent stones; strongly acid, pH 5.2 by Hellige-Truog; NaF pH 9.4; gradual wavy boundary.

2BCt1—34 to 49 inches (86 to 124 cm); light red (2.5YR 7/6) extremely cobbly loam, reddish brown (2.5YR 5/4) moist; 16 percent clay; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine to coarse roots; common very fine tubular pores; few distinct discontinuous clay films in pores; 10 percent gravel, 50 percent cobbles, and 5 percent stones; strongly acid, pH 5.2 by Hellige-Truog; NaF pH 9.3; gradual wavy boundary.

2BCt2—49 to 64 inches (124 to 163 cm); light reddish brown (2.5YR 7/4) extremely stony loam, light reddish brown (2.5YR 6/4) moist; 16 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and medium roots; common fine and medium tubular pores; few distinct discontinuous clay films in root channels and/or pores; 10 percent cobbles and 50 percent stones; strongly acid, pH 5.2 by Hellige-Truog; NaF pH 9.2; gradual wavy boundary.

2C—64 to 86 inches (163 to 218 cm); pink (2.5YR 8/3) very stony loam, light red (2.5YR 7/6) moist; 9 percent clay; massive; slightly hard, friable, slightly sticky, slightly plastic; 10 percent cobbles and 30 percent stones; strongly acid, pH 5.2 by Hellige-Truog; NaF pH 9.3.

Type location: Plumas County, California; about 2 miles east of Camel Peak Lookout, approximately 300 feet west and 2,550 feet south of the northeast corner of sec. 34, T. 22 N., R. 8 E.; 39 degrees, 43 minutes, 22.5 seconds north latitude and 121 degrees, 3 minutes, 55.8 seconds west longitude; NAD83; USGS Quad: American House, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 40 to 47 degrees F (4 to 8 degrees C). The soil moisture control section is dry in all parts from about August to October (about 60 days). The particle-size control section averages 20 to 23 percent clay and 41 to 58 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. The content of organic matter is 8 to 17 percent to a depth of 10 inches (25 cm), 2 to 5 percent from 10 to 23 inches (25 to 58 cm), 1 to 2 percent from 23 to 64 inches (58 to 163 cm), and less than 1 percent from 64 to 85 inches (163 to 216 cm). By sum of cations, base saturation ranges from 10 to 25 percent from 0.5 inch to 17 inches (1.27 to 43 cm) and is less than 10 percent from 17 to 85 inches (43 to 216 cm). Rock fragments on the surface range from 0 to 5 percent gravel, 0 to 10 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders. In some pedons the 2BCt horizon and/or the 2C horizon do not occur.

The A horizon has dry color of 7.5YR 4/2, 4/3, 5/3, 5/4, or 6/4 or 10YR 4/3. Moist color is 7.5YR 3/2, 3/3, 4/3, or 4/4 or 5YR 2/2 or 3/2. Texture is loam, sandy loam, gravelly sandy loam, very gravelly sandy loam, or cobbly sandy loam. The content of clay ranges from 8 to 18 percent. The horizon has 5 to 35 percent gravel and 0 to 15 percent cobbles. NaF pH is 10.5 to 11.5. Acid oxalate extractable Al plus ½ Fe ranges from 1.4 to 2.0. P retention ranges from 80 to 85. The content of glass ranges from 5 to 10 percent. Reaction ranges from slightly acid to strongly acid.

The Bt horizon has dry color of 7.5YR 5/3, 5/4, 6/3, 6/4, 7/4, or 7/6. Moist color is 7.5YR 3/2, 3/3, 3/4, 4/2, 4/3, 4/4, 5/3, or 5/6 or 5YR 4/4. Texture is gravelly loam, gravelly sandy loam, very gravelly loam, very gravelly fine sandy loam, or very gravelly sandy loam. The content of clay ranges from 10 to 25 percent. The horizon has 10 to 40 percent gravel and 0 to 15 percent cobbles. NaF pH is 10.5 to 11.5. Acid oxalate extractable Al plus ½ Fe ranges from 1.0 to 1.8. P retention ranges from 65 to 85. The content of glass ranges from 2 to 10 percent. Reaction ranges from slightly acid to strongly acid.

The 2Bt horizon has dry color of 7.5YR 5/4, 5/6, 6/4, 6/6, 7/4, or 7/6; 5YR 4/6, 5/4, or 5/6; 2.5YR 7/6; or 10YR 6/4, 7/4, 7/6, or 8/4. Moist color is 7.5YR 3/4, 4/3, 4/4, 5/4,

5/6, 5/8, or 6/6; 5YR 4/6 or 5/4; or 10YR 4/3, 5/6, 6/6, or 7/6. Texture is very gravelly loam, very gravelly sandy loam, very gravelly fine sandy loam, very gravelly sandy clay loam, extremely gravelly loam, extremely gravelly coarse sandy loam, extremely gravelly sandy clay loam, very cobbly loam, very cobbly sandy clay loam, very cobbly clay loam, extremely cobbly loam, extremely cobbly sandy clay loam, very stony loam, or very stony clay loam. The content of clay ranges from 15 to 32 percent. The horizon has 10 to 70 percent gravel, 5 to 50 percent cobbles, and 0 to 30 percent stones. NaF pH is 9.3 to 10.5. Acid oxalate extractable Al plus ½ Fe is less than 1. P retention is less than 60. Reaction ranges from slightly acid to very strongly acid.

The 2BCt horizon has dry color of 7.5YR 8/6, 2.5YR 7/4, 10YR 7/4 or 7/6, or 2.5Y 6/2, 8/1, 8/3, or 8/4. Moist color is 7.5YR 5/6 or 6/3, 2.5YR 6/4, 10YR 6/6, or 2.5Y 6/6, 7/3, 7/4, or 7/6. Texture is very stony loam, extremely cobbly loam, extremely stony loam, or extremely gravelly coarse sandy loam. The content of clay ranges from 12 to 18 percent. The horizon has 0 to 80 percent gravel, 5 to 50 percent cobbles, and 5 to 50 percent stones. NaF pH is 9.0 to 9.5. Reaction ranges from moderately acid to very strongly acid.

The 2C horizon has dry color of 2.5YR 8/3 or 10YR 7/6. Moist color is 2.5YR 7/6 or 10YR 5/6. Texture is very stony loam, extremely gravelly coarse sandy loam, extremely gravelly sandy loam, or very gravelly fine sandy loam. The content of clay ranges from 9 to 15 percent. The horizon has 0 to 80 percent gravel, 5 to 10 percent cobbles, and 30 to 50 percent stones. NaF pH is 9.0 to 9.5. Reaction ranges from moderately acid to very strongly acid.

Subaco Taxadjunct

The Subaco taxadjunct consists of moderately deep, poorly drained soils that formed in clayey alluvium derived from mixed rock sources. These soils are on basin rims. Slopes range from 0 to 2 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Aquic Durixererts

Typical Pedon

Subaco taxadjunct clay, on a slope of less than 1 percent, under a cover of annual grasses, at an elevation of 69 feet (21 m). When described on 10/27/1988, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 8 inches (0 to 20 cm); dark gray (10YR 4/1) clay, very dark gray (10YR 2/1) moist; 54 percent clay; strong coarse prismatic structure parting to strong fine and medium granular; very hard, firm, very sticky, very plastic; common very fine roots; many very fine tubular and irregular pores; moderately alkaline, pH 8.0 by pH meter 1:1 water; clear smooth boundary.

Bss—8 to 16 inches (20 to 41 cm); dark gray (10YR 4/1) silty clay, very dark gray (10YR 3/1) moist; 55 percent clay; strong coarse prismatic structure parting to strong medium angular blocky; extremely hard, very firm, very sticky, very plastic; common very fine roots; many very fine tubular and irregular pores; 3 percent slickensides; strongly alkaline, pH 8.7 by pH meter 1:1 water; clear smooth boundary.

Bkss—16 to 29 inches (41 to 74 cm); dark gray (10YR 4/1) silty clay; very dark gray (10YR 3/1) moist; 55 percent clay; strong coarse prismatic structure parting to strong medium angular blocky; extremely hard, very firm, very sticky, very plastic; few very fine roots; many very fine tubular and irregular pores; 3 percent slickensides; strongly effervescent; 3 percent fine irregular carbonate masses; strongly alkaline, pH 9.0 by pH meter 1:1 water; abrupt wavy boundary.

Bk—29 to 35 inches (74 to 89 cm); light brownish gray (10YR 6/2) clay, grayish brown (10YR 5/2) moist; 50 percent clay; moderate medium subangular blocky structure; very hard, very firm, very sticky, very plastic; few very fine roots; many very fine tubular and irregular pores; finely disseminated carbonates throughout; strongly effervescent; very strongly alkaline, pH 9.2 by pH meter 1:1 water; abrupt wavy boundary.

2Bkqm—35 to 42 inches (89 to 107 cm); indurated duripan, dark grayish brown (2.Y 4/2) moist; silty clay loam; 32 percent clay; strongly effervescent; strongly alkaline, pH 8.8 by pH meter 1:1 water; indurated, silica- and lime-laminated capping 1 cm thick; abrupt smooth boundary.

2Cd—42 inches (107 cm); densic material; sandy loam; 7 percent clay; moderately alkaline, pH 8.3 by pH meter 1:1 water.

Type location: Butte County, California; about 1.1 miles northwest of Pennington, approximately 1,200 feet north and 200 feet west of the southeast corner of sec. 24, T. 17 N., R. 1 E.; 39 degrees, 18 minutes, 26 seconds north latitude and 121 degrees, 47 minutes, 52 seconds west longitude; NAD27; USGS Quad: Pennington, California.

Range in Characteristics

Depth to the duripan ranges from 20 to 40 inches (51 to 102 cm). Depth to dense material ranges from 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from about June to October (120 to 125 days) when the soils are not irrigated. The particle-size control section averages 40 to 60 percent clay. Mineralogy is smectitic. The content of organic matter is 1 to 3 percent to a depth of 29 inches (74 cm) and is less than 1 percent from 29 to 35 inches (74 to 89 cm). The depth to carbonates ranges from 0 to 25 inches (0 to 64 cm). Electrical conductivity ranges from less than 1 mmho to 4 mmhos per cm throughout the profile. Surface-initiated, reversible cracks 0.75 inch to 2 inches (1.9 to 5 cm) wide extend to a depth of 29 inches (74 cm) or more or to the 2Bkqm horizon. The cracks remain open from June to October (150 to 180 days) in nonirrigated areas and are closed the rest of the year. A fluctuating water table can occur between the top of the duripan and 18 to 40 inches (46 to 102 cm) below the surface of the soil from December through April.

The A horizon has dry color of 10YR 3/1 or 4/1. Moist color is 10YR 2/1 or 3/1. The content of clay ranges from 45 to 55 percent. The content of exchangeable sodium is 0 to 2 percent. SAR is 0 to 2. Reaction is slightly alkaline or moderately alkaline.

The Bss horizon has dry color of 10YR 3/1, 4/1, or 5/1. Moist color is 10YR 3/1 or 4/1. Texture is silty clay or clay. The content of clay ranges from 50 to 60 percent. The content of exchangeable sodium is 2 to 3 percent. SAR is 2 to 3. Reaction ranges from slightly alkaline to strongly alkaline.

The Bkss horizon has dry color of 10YR 4/1, 5/1, 6/1, or 7/1. Moist color is 10YR 3/1, 4/1, or 5/1. Texture is silty clay or clay. The content of clay ranges from 50 to 60 percent. This horizon is slightly effervescent to strongly effervescent. The content of exchangeable sodium is 3 to 12 percent. SAR is 3 to 7. Reaction is moderately alkaline or strongly alkaline.

The Bk horizon has dry color of 10YR 6/2, 7/2, or 8/2. Moist color is 10YR 5/2 or 6/2. Texture is clay loam or clay. The content of clay ranges from 35 to 60 percent. This horizon is strongly effervescent or violently effervescent. The content of exchangeable sodium is 10 to 13 percent. SAR is 5 to 10. The content of calcium carbonate ranges from 15 to 20 percent. Reaction is strongly alkaline or very strongly alkaline.

Reaction in the 2Bkqm horizon ranges from slightly alkaline to strongly alkaline.

The Subaco taxadjunct is a taxadjunct because it has a duripan and a calcic horizon, whereas the Subaco series typically has a paralithic contact of siltstone. This

difference does not significantly affect the use, management, or interpretations of the soils.

Sunnyslope Series

The Sunnyslope series consists of shallow, well drained soils that formed in residuum derived from metavolcanic rocks, mainly greenschist. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada foothills. Slopes range from 2 to 15 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic, shallow Ultic Haploxeralfs

Typical Pedon

Sunnyslope loam, on a north-facing slope of 7 percent, under a cover of blue oak, wild oat, rattlesnake brome, Italian ryegrass, red clover, dandelion, and wild onion, at an elevation of 215 feet (65 m). When described on 7/30/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); strong brown (7.5YR 5/6) loam, dark brown (7.5YR 3/3) moist; 17 percent clay; moderate very fine and fine subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; many very fine roots; common fine and many very fine tubular pores; 2 percent subangular quartz gravel and 10 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt1—2 to 6 inches (5 to 15 cm); strong brown (7.5YR 5/6) gravelly loam, dark reddish brown (5YR 3/4) moist; 20 percent clay; strong fine and medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; many very fine roots; common fine and many very fine tubular pores; 4 percent patchy faint clay films on faces of peds; 15 percent subangular gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual wavy boundary.

Bt2—6 to 10 inches (15 to 25 cm); yellowish red (5YR 4/6) very cobbly loam, reddish brown (5YR 4/4) moist; 25 percent clay; strong fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common fine and many very fine roots; few fine and many very fine tubular pores; 25 percent patchy faint clay films on faces of peds; 35 percent subangular gravel and 25 percent subangular cobbles; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.

Bt3—10 to 14 inches (25 to 36 cm); yellowish red (5YR 4/6) extremely gravelly clay loam, reddish brown (5YR 4/4) moist; 29 percent clay; strong very fine and fine subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; few medium and common very fine roots; few fine and many very fine tubular pores; 25 percent patchy faint clay films on faces of peds; 70 percent subangular gravel; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.

Crt—14 to 21 inches (36 to 53 cm); yellowish red (5YR 5/8), moderately cemented greenschist bedrock, yellowish red (5YR 4/6) moist; few very fine, fine, and coarse roots on top of the horizon; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Butte County, California; about 4 miles southeast of Palermo, approximately 600 feet north and 1,250 feet east of the southwest corner of sec. 22, T. 18 N., R. 4 E.; 39 degrees, 23 minutes, 47.10 seconds north latitude and 121 degrees, 30 minutes, 57.59 seconds west longitude; NAD83; USGS Quad: Palermo, California.

Range in Characteristics

The depth to paralithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 59 to 65 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about June 1 to October 15 (about 150 days). The particle-size control section averages 15 to 25 percent clay and 35 to 50 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 15 percent cobbles, and 0 to 5 percent stones.

The A horizon has dry color of 7.5YR 4/6, 5/4, or 5/6. Moist color is 7.5YR 3/3 or 3/4. Texture is loam. The content of clay ranges from 10 to 18 percent. The content of gravel is 2 to 12 percent. The content of organic matter is 3 to 7 percent. By sum of cations, base saturation ranges from 65 to 75 percent. Reaction is slightly acid.

The upper part of the Bt horizon has dry color of 7.5YR 5/6 or 6/4 or 5YR 5/6. Moist color is 7.5YR 4/4 or 5YR 3/4. Texture is loam, gravelly loam, or very gravelly loam. The content of clay ranges from 15 to 20 percent. The content of gravel is 15 to 35 percent. The content of organic matter is 1 to 4 percent. By sum of cations, base saturation ranges from 65 to 75 percent. Reaction is moderately acid or slightly acid.

The lower part of the Bt horizon has dry color of 5YR 4/6 or 5/6 or 7.5YR 5/4. Moist color is 5YR 4/3 or 4/4. Texture is very gravelly loam, extremely gravelly loam, very cobbly loam, or extremely gravelly clay loam. The content of clay ranges from 15 to 30 percent. The content of gravel is 35 to 70 percent, and the content of cobbles is 0 to 25 percent. By sum of cations, base saturation ranges from 65 to 75 percent. The content of organic matter is 0.5 to 2 percent. Reaction is moderately acid or slightly acid.

Surnuf Series

The Surnuf series consists of very deep, well drained soils that formed in residuum and colluvium derived from metamorphic and intrusive igneous rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 70 percent. The mean annual precipitation is about 52 inches (1,321 mm), and the mean annual air temperature is about 56 degrees F (13 degrees C).

Taxonomic class: Fine, parasesquic, mesic Ultic Palexeralfs

Typical Pedon

Surnuf gravelly loam, on a northwest-facing slope of 37 percent, under a cover of Douglas-fir, ponderosa pine, and California black oak, at an elevation of 2,040 feet (622 m). When described on 9/27/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 4 inches (3 to 10 cm); reddish yellow (5YR 7/6) gravelly loam, yellowish red (5YR 4/6) moist; 26 percent clay; strong fine and medium granular structure; moderately hard, very friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine to medium irregular and tubular pores; 30 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear wavy boundary.

Bt1—4 to 9 inches (10 to 23 cm); reddish yellow (5YR 7/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 31 percent clay; moderate fine and medium subangular blocky structure; moderately hard, very friable, moderately sticky, moderately plastic; many very fine to medium roots; many very fine and fine and common medium irregular and tubular pores; 90 percent continuous distinct clay films on faces of peds; 25 percent gravel; neutral, pH 6.8 by Hellige-Truog; gradual smooth boundary.

Bt2—9 to 16 inches (23 to 41 cm); reddish yellow (5YR 7/6) gravelly clay loam, red (2.5YR 4/6) moist; 35 percent clay; moderate fine and medium subangular blocky structure; moderately hard, very friable, moderately sticky, moderately plastic; few coarse and many very fine to medium roots; many very fine to medium tubular pores; 90 percent continuous distinct clay films on faces of peds; 20 percent gravel; neutral, pH 6.8 by Hellige-Truog; gradual smooth boundary.

Bt3—16 to 27 inches (41 to 69 cm); light red (2.5YR 6/8) gravelly clay, red (2.5YR 5/6) moist; 42 percent clay; moderate fine and medium subangular blocky structure; moderately hard, very friable, moderately sticky, moderately plastic; few coarse and many very fine to medium roots; many very fine to medium tubular pores; 95 percent continuous distinct clay films on faces of peds; 20 percent gravel; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.

Bt4—27 to 29 inches (69 to 74 cm); light red (2.5YR 6/8) gravelly clay, red (2.5YR 4/8) moist; 50 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; few coarse and common very fine to medium roots; many very fine and fine and common medium tubular and irregular pores; 95 percent continuous distinct clay films on faces of peds; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt5—29 to 56 inches (74 to 142 cm); light red (2.5YR 6/8) gravelly silty clay, red (2.5YR 4/8) moist; 55 percent clay; strong fine and medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; few coarse and common very fine to medium roots; many very fine and fine and common medium tubular and irregular pores; 99 percent continuous prominent clay films on faces of peds; 20 percent gravel; slightly acid, pH 6.4 by Hellige-Truog; gradual smooth boundary.

Bt6—56 to 72 inches (142 to 183 cm); light red (2.5YR 6/8) silty clay, red (2.5YR 4/8) moist; 50 percent clay; strong fine and medium angular blocky structure; very hard, friable, moderately sticky, moderately plastic; few very fine to coarse roots; common very fine and fine and few medium tubular and irregular pores; 99 percent continuous prominent clay films on faces of peds; 10 percent gravel; slightly acid, pH 6.4 by Hellige-Truog.

Type location: Butte County, California; about 0.2 mile west of the intersection of Pinkston Canyon Road and Highway 70, approximately 300 feet south and 450 feet west of the northeast corner of sec. 34, T. 22 N., R. 4 E.; 39 degrees, 43 minutes, 32 seconds north latitude and 121 degrees, 30 minutes, 24 seconds west longitude; NAD83; USGS Quad: Cherokee, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 52 to 59 degrees F (11 to 15 degrees C). The particle-size control section averages 35 to 45 percent clay and 10 to 35 percent rock fragments, mostly gravel. Mineralogy is parasesquic. Rock fragments on the surface range from 0 to 30 percent gravel, 0 to 10 percent cobbles, and 0 to 2 percent stones.

The A horizon has dry color of 7.5YR 6/4, 6/6, or 7/4 or 5YR 5/4, 6/4, or 7/6. Moist color is 7.5YR 4/3 or 4/4 or 5YR 3/3, 4/3, 4/4, or 4/6. Texture is gravelly loam, gravelly clay loam, clay loam, or loam. The content of clay ranges from 22 to 30 percent. The horizon has 5 to 30 percent gravel and 0 to 5 percent cobbles. Reaction is slightly acid or neutral.

The upper part of the Bt horizon has dry color of 7.5YR 6/4 or 6/6; 5YR 5/4, 5/6, 6/6, or 7/6; or 2.5YR 4/6, 5/4, 6/6, or 7/6. Moist color is 7.5YR 4/4 or 4/6; 5YR 4/3, 4/4, 4/6, 5/6, or 5/8; or 2.5YR 4/4 or 4/6. Texture is clay loam or gravelly clay loam. The content of clay ranges from 27 to 40 percent. The content of gravel is 0 to 25 percent, and the content of cobbles is 0 to 10 percent. Reaction is slightly acid or neutral.

The middle part of the Bt horizon has dry color of 7.5YR 6/6, 5YR 5/6 or 6/6, or 2.5YR 3/6, 4/8, 6/6, 6/8, or 7/6. Moist color is 5YR 4/6, 5/6, or 5/8 or 2.5YR 4/6, 5/6, or 4/8. Texture is clay, gravelly clay, cobbly clay, gravelly clay loam, or very cobbly clay loam. The content of clay ranges from 35 to 55 percent. The content of gravel is 0 to 30 percent, the content of cobbles is 0 to 25 percent, and the content of stones is 0 to 5 percent. Reaction is slightly acid or neutral.

The lower part of the Bt horizon has dry color of 5YR 6/6 or 6/8 or 2.5YR 4/4, 5/6, 6/6, 7/6, 4/8, or 6/8. Moist color is 5YR 5/6 or 5/8; 2.5YR 3/4, 4/6, 4/8, 5/6, or 5/8; or 7.5YR 5/6 or 6/8. Texture is clay, gravelly clay, cobbly clay, stony clay, very cobbly clay, extremely cobbly clay, silty clay, gravelly silty clay, very gravelly silty clay loam, gravelly clay loam, very gravelly clay loam, or extremely gravelly clay loam. The content of clay ranges from 35 to 55 percent. The content of gravel is 10 to 50 percent, the content of cobbles is 0 to 30 percent, and the content of stones is 0 to 25 percent. Reaction ranges from moderately acid to neutral.

Surnuf Taxadjunct

The Surnuf taxadjunct consists of very deep, well drained soils that formed in residuum and colluvium derived from metavolcanic rocks. These soils are on metamorphic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 52 inches (1,321 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Fine, parasesquic, mesic Ultic Haploxeralfs

Typical Pedon

Surnuf taxadjunct loam, on a northeast-facing slope of 26 percent, under a cover of mixed conifers, hardwoods, and shrubs, at an elevation of 1,845 feet (562 m). When described on 8/9/2000, the soil was dry to a depth of 18 inches (46 cm) and slightly moist from 18 to 67 inches (46 to 170 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 2 cm); slightly decomposed plant material

A—1 to 5 inches (2 to 13 cm); reddish brown (5YR 5/4) loam, dark reddish brown (5YR 3/4) moist; 25 percent clay; strong fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots; many very fine irregular pores; 10 percent greenstone schist gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.0; abrupt smooth boundary.

Bt1—5 to 11 inches (13 to 28 cm); red (2.5YR 5/6) clay loam, red (2.5YR 4/6) moist; 38 percent clay; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common fine and medium and few very fine roots; common fine and many very fine tubular pores; 20 percent discontinuous distinct clay films on surfaces along pores; 10 percent greenstone schist gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.0; abrupt smooth boundary.

Bt2—11 to 18 inches (28 to 46 cm); red (2.5YR 5/6) silty clay, red (2.5YR 4/6) moist; 50 percent clay; strong medium angular blocky structure; hard, very firm, very sticky, very plastic; few very fine and fine and common medium and coarse roots; few fine and common very fine tubular pores; 50 percent continuous prominent clay films on surfaces along pores; 5 percent greenstone schist gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 9.5; gradual smooth boundary.

Bt3—18 to 31 inches (46 to 79 cm); red (2.5YR 5/8) silty clay, red (2.5YR 4/8) moist; 55 percent clay; strong medium angular blocky structure; hard, very firm, very sticky, very plastic; few fine, common medium, and few coarse roots; few fine and common very fine tubular pores; 60 percent continuous prominent clay films on

surfaces along pores; 5 percent greenstone schist gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.5; gradual smooth boundary.

Bt4—31 to 43 inches (79 to 109 cm); red (2.5YR 5/8) silty clay, red (2.5YR 4/8) moist; 45 percent clay; strong medium angular blocky structure; hard, friable, very sticky, very plastic; few fine to coarse roots; common very fine tubular pores; 80 percent continuous prominent clay films on surfaces along pores; 5 percent greenstone schist gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.

Bt5—43 to 54 inches (109 to 137 cm); red (2.5YR 5/8) very stony silty clay loam, red (2.5YR 4/8) moist; 38 percent clay; moderate fine angular blocky structure; hard, friable, very sticky, very plastic; few fine and common medium and coarse roots; common very fine tubular pores; 80 percent continuous prominent clay films on surfaces along pores; 5 percent greenstone schist gravel and 50 percent greenstone schist stones; strongly acid, pH 5.5 by Hellige-Truog; gradual smooth boundary.

BCt—54 to 67 inches (137 to 170 cm); 30 percent reddish yellow (5YR 6/8) and 70 percent red (2.5YR 5/6) silty clay loam, 70 percent red (2.5YR 4/6) and 30 percent yellowish red (5YR 5/6) moist; 33 percent clay; moderate fine subangular blocky structure; hard, friable, slightly sticky, moderately plastic; few fine roots; common very fine tubular pores; 80 percent continuous prominent clay films on surfaces along pores; 5 percent greenstone schist gravel; very strongly acid, pH 5.0 by Hellige-Truog.

Type location: Butte County, California; about 1.1 miles northwest of Bloomer Hill Lookout, approximately 1,700 feet west and 1,600 feet south of the northeast corner of sec. 24, T. 21 N., R. 4 E.; 39 degrees, 39 minutes, 54 seconds north latitude and 121 degrees, 28 minutes, 28 seconds west longitude; NAD83; USGS Quad: Berry Creek, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 53 to 59 degrees F (12 to 15 degrees C). The particle-size control section averages 48 percent clay and 1 percent rock fragments, mostly gravel. Mineralogy is mixed. NaF pH is 9.0 to 9.5 to a depth of 31 inches (79 cm). Rock fragments on the surface range from 0 to 10 percent gravel, 0 to 20 percent cobbles, 0 to 15 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 5YR 5/4, 5/6, or 6/4 or 7.5YR 6/4. Moist color is 5YR 3/3, 3/4, or 3/6 or 2.5YR 4/4. Texture is loam. The content of clay ranges from 20 to 25 percent. The horizon has 5 to 10 percent gravel, 0 to 30 percent cobbles, and 0 to 30 percent stones. The content of organic matter is 5 to 8 percent. By sum of cations, base saturation ranges from 50 to 55 percent. Reaction is slightly acid or neutral.

The upper part of the Bt horizon has dry color of 2.5YR 5/6 or 5YR 4/6 or 6/6. Moist color is 2.5YR 3/3, 3/6, 4/4, or 4/6 or 5YR 4/6. Texture is clay loam, gravelly clay loam, very gravelly clay loam, gravelly loam, or silty clay loam. The content of clay ranges from 22 to 40 percent. The content of gravel is 0 to 40 percent, the content of cobbles is 0 to 10 percent, and the content of stones is 0 to 30 percent. The content of organic matter is 3 to 6 percent. By sum of cations, base saturation ranges from 50 to 55 percent. Reaction ranges from strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 2.5YR 4/8, 5/6, 5/8, or 6/6; 5YR 6/6 or 6/8; or 7.5YR 5/8. Moist color is 2.5YR 3/6, 4/6, 4/8, or 5/6; 5YR 5/8; 7.5YR 5/6; or 10R 4/6. Texture is silty clay, clay, silty clay loam, gravelly clay, gravelly silty clay, extremely bouldery silty clay, extremely cobbly silty clay, or very stony silty clay loam. The content of clay ranges from 35 to 65 percent. The content of gravel is 0 to 25 percent, the content of cobbles is 0 to 60 percent, the content of stones is 0 to 50 percent, and the content of boulders is 0 to 60 percent. The content of organic matter

is 1.0 to 3.0 percent. By sum of cations, base saturation ranges from 50 to 65 percent. Reaction ranges from very strongly acid to slightly acid.

The BCt horizon has dry color of 5YR 5/6 or 5/8, 2.5YR 5/6 or 6/8, or 7.5YR 6/6. Moist color is 5YR 5/6, 2.5YR 4/6 or 5/6, or 7.5YR 4/6 or 6/8. Texture is silty clay loam, silt loam, gravelly sandy clay loam, or very gravelly sandy clay loam. The content of clay ranges from 25 to 35 percent. The horizon has 0 to 40 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 0.5 to 1 percent. By sum of cations, base saturation ranges from 50 to 65 percent. Reaction ranges from very strongly acid to moderately acid.

The Surnuf taxadjunct is a taxadjunct because the content of clay at a depth of 60 inches (150 cm) decreases by more than 20 percent. This difference does not significantly affect the use, management, or interpretations of the soils.

Swedesflat Series

The Swedesflat series consists of shallow, well drained soils that formed in residuum derived from intrusive igneous rocks, mainly quartz diorite. These soils are on ridgetops and side slopes on plutons on Sierra Nevada foothills. Slopes range from 2 to 30 percent. The mean annual precipitation is about 35 inches (889 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Loamy, mixed, active, thermic, shallow Ultic Haploxeralfs

Typical Pedon

Swedesflat cobbly fine sandy loam, on a northeast-facing slope of 10 percent, under a cover of annual grasses, forbs, blue oak, and scattered foothill pine, whiteleaf manzanita, buckbrush, and Pacific poison oak, at an elevation of 1,450 feet (442 m). When described on 8/9/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); very pale brown (10YR 7/4) cobbly fine sandy loam, yellowish brown (10YR 5/4) moist; 14 percent clay; weak very fine and fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many very fine roots; many very fine to medium tubular pores; 10 percent subangular gravel and 15 percent subangular cobbles; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.

ABt—2 to 8 inches (5 to 20 cm); light yellowish brown (10YR 6/4) cobbly sandy loam, yellowish brown (10YR 5/4) moist; 14 percent clay; weak fine subangular blocky structure; soft, very friable, nonsticky, nonplastic; many fine roots; many very fine to medium tubular pores; 3 percent patchy faint clay films on surfaces along pores and 3 percent patchy faint clay films on surfaces along root channels; 2 percent fine spherical reddish yellow (5YR 6/8) oxidized iron masses; 10 percent subangular gravel and 15 percent subangular cobbles; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

Bt—8 to 12 inches (20 to 30 cm); strong brown (7.5YR 5/6) sandy loam, strong brown (7.5YR 4/6) moist; 18 percent clay; moderate fine and medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine to medium tubular pores; 7 percent patchy faint clay films on faces of peds; 5 percent subangular gravel; moderately acid, pH 6.1 by Hellige-Truog; clear wavy boundary.

Crt—12 to 18 inches (30 to 46 cm); weakly cemented quartz diorite bedrock; few fine roots; 40 percent clay films in fractures; clear wavy boundary.

Cr—18 inches (46 cm); weakly cemented quartz diorite bedrock; few fine roots on top of the horizon.

Type location: Butte County, California; about 1.5 miles west of Hurleton, approximately 500 feet south and 1,600 feet west of the northeast corner of sec. 21, T. 19 N., R. 5 E.; 39 degrees, 29 minutes, 48 seconds north latitude and 121 degrees, 24 minutes, 46 seconds west longitude; NAD83; USGS Quad: Bangor, California.

Range in Characteristics

The depth to paralithic bedrock is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 59 to 63 degrees F (16 to 17 degrees C). The soil moisture control section is dry in all parts from about June through October (about 165 days). The particle-size control section averages 15 to 25 percent clay, 4 to 25 percent gravel, and 0 to 5 percent cobbles. Mineralogy is mixed. Rock fragments on the surface range from 0 to 3 percent stones.

The A horizon has dry color of 10YR 5/3 or 7/4 or 7.5YR 4/4, 4/6, or 5/4. Moist color is 10YR 3/4 or 5/4 or 7.5YR 3/4 or 4/4. Texture is loam, gravelly loam, sandy loam, gravelly sandy loam, fine sandy loam, or cobbly fine sandy loam. The content of clay ranges from 12 to 20 percent. The horizon has 2 to 30 percent gravel and 0 to 15 percent cobbles. By sum of cations, base saturation ranges from 50 to 70 percent. The content of organic matter is 2 to 8 percent. Reaction ranges from strongly acid to neutral.

The ABt horizon has dry color of 10YR 6/4 or 7.5YR 5/4, 5/6, or 6/4. Moist color is 10YR 5/4 or 7.5YR 4/4 or 4/6. Texture is loam, gravelly loam, sandy loam, gravelly sandy loam, or cobbly sandy loam. The content of clay ranges from 13 to 20 percent. The horizon has 5 to 35 percent gravel and 0 to 15 percent cobbles. By sum of cations, base saturation ranges from 40 to 60 percent. The content of organic matter is 1.5 to 3 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 10YR 5/3 or 5/4, 7.5YR 5/4 or 5/6, or 5YR 5/8. Moist color is 7.5YR 3/4, 4/4, or 4/6 or 5YR 4/6. Texture is gravelly loam, sandy loam, gravelly fine sandy loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 18 to 25 percent. The content of gravel is 0 to 30 percent. By sum of cations, base saturation ranges from 40 to 74 percent. The content of organic matter is 0.2 to 1.5 percent. Reaction ranges from moderately acid to neutral.

Thermalito Series

The Thermalito series consists of moderately deep, somewhat poorly drained soils that formed in alluvium derived from metamorphic and igneous rocks. These soils are on mounds on intermediate terraces. Slopes range from 0 to 9 percent. The mean annual precipitation is about 24 inches (610 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Abruptic Durixeralfs

Typical Pedon

Thermalito sandy loam, on a 3 slope of percent, under a cover of annual grasses and forbs, at an elevation of 161 feet (49 m). When described on 4/17/1997, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (7.5YR 5/4) sandy loam, dark reddish brown (5YR 3/4) moist; 15 percent clay; moderate thin platy structure parting to moderate fine subangular blocky; slightly hard, very friable, nonsticky, nonplastic; common very fine roots; few very fine tubular pores; 5 percent fine irregular strong brown (7.5YR 4/6) oxidized iron masses; 10 percent well rounded gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bt1—2 to 6 inches (5 to 15 cm); light brown (7.5YR 6/4) gravelly sandy loam, reddish brown (5YR 4/4) moist; 20 percent clay; moderate medium subangular blocky

structure; hard, friable, nonsticky, nonplastic; common very fine roots; few very fine tubular pores; 20 percent discontinuous distinct clay films on faces of peds; 2 percent fine irregular black (N 2/0) manganese masses and 5 percent fine irregular strong brown (7.5YR 4/6) oxidized iron masses; 20 percent well rounded gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.

Bt2—6 to 12 inches (15 to 30 cm); light brown (7.5YR 6/4) sandy clay loam, reddish brown (5YR 4/4) moist; 24 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots; few fine and common very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds; 10 percent well rounded gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.

Bt3—12 to 18 inches (30 to 46 cm); reddish yellow (7.5YR 6/6) gravelly sandy clay loam, reddish brown (5YR 4/4) moist; 28 percent clay; moderate medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; few fine and common very fine tubular pores; 50 percent discontinuous distinct clay films on faces of peds; 25 percent well rounded gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.

Bt4—18 to 23 inches (46 to 58 cm); light brown (7.5YR 6/4) gravelly sandy clay loam, reddish brown (5YR 5/4) moist; 30 percent clay; moderate fine subangular blocky structure; hard, firm, slightly sticky, slightly plastic; few very fine roots; few fine and common very fine tubular pores; 50 percent discontinuous distinct clay films on faces of peds; 25 percent well rounded gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.

Bt5—23 to 25 inches (58 to 63 cm); reddish yellow (5YR 6/6) gravelly sandy clay loam, yellowish red (5YR 4/6) moist; 33 percent clay; moderate fine subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few very fine roots; few fine tubular pores; 50 percent discontinuous distinct clay films on faces of peds; 20 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

2Bt6—25 to 29 inches (63 to 74 cm); red (2.5YR 5/6) gravelly clay, red (2.5YR 4/6) moist; 50 percent clay; moderate fine angular blocky structure; extremely hard, very firm, very sticky, moderately plastic; few very fine roots; few very fine tubular pores; 55 percent discontinuous distinct clay films on faces of peds; 25 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

2Bt7—29 to 32 inches (74 to 81 cm); yellowish red (5YR 5/6) gravelly clay, red (2.5YR 4/6) moist; 45 percent clay; moderate fine angular blocky structure; extremely hard, very firm, very sticky, moderately plastic; few very fine roots; few very fine tubular pores; 55 percent discontinuous distinct clay films on faces of peds; 2 percent fine irregular black (N 2/0) manganese masses; 30 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

3Bqm—32 to 60 inches (81 to 152 cm); indurated duripan; cemented by silica; 30 percent well rounded gravel.

Type location: Butte County, California; about 3.8 miles west of Oroville, approximately 1,600 feet west and 650 feet south of the northeast corner of sec. 16, T. 19 N., R. 3 E.; 39 degrees, 30 minutes, 28 seconds north latitude and 121 degrees, 38 minutes, 15 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

Depth to an indurated gravelly duripan is 20 to 40 inches (51 to 102 cm), and depth to the 2Bt horizon is 18 to 25 inches (46 to 63 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 24 to 35 percent clay and 2 to 30 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur from the top of the

duripan to 14 inches (36 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 0 to 20 percent gravel.

The A horizon has dry color of 7.5YR 5/4, 5/6, 6/4, 6/6, or 7/3 or 10YR 6/4 or 7/3. Moist color is 5YR 3/4, 4/4, or 4/6; 7.5YR 3/3, 4/3, or 5/4; or 10YR 3/4. Texture is sandy loam, gravelly sandy loam, fine sandy loam, or loam. The content of clay ranges from 12 to 20 percent. The content of gravel is 2 to 25 percent. The content of organic matter is 0.5 to 2 percent. Redoximorphic features range from 2 to 25 percent soft oxidized iron masses. Reaction ranges from strongly acid to slightly acid.

The Bt horizon has dry color of 7.5YR 5/6, 6/4, 6/6, or 7/4 or 5YR 5/6, 6/4, or 6/6. Moist color is 7.5YR 3/4, 4/4, or 4/6 or 5YR 3/4, 4/4, 4/6, or 5/4. Texture is gravelly sandy loam, sandy clay loam, gravelly sandy clay loam, loam, or clay loam. The content of clay ranges from 18 to 33 percent. The content of gravel is 5 to 30 percent. The content of organic matter is 0.1 to 0.5 percent. Redoximorphic features range from 0 to 5 percent soft oxidized iron masses and 0 to 2 percent soft manganese masses. Reaction ranges from strongly acid to neutral.

The 2Bt horizon has dry color of 2.5YR 5/6; 5YR 5/6, 6/4, or 6/6; or 7.5YR 5/4 or 6/6. Moist color is 2.5YR 4/6 or 5YR 4/4, 4/6, or 5/4. Texture is gravelly clay, clay, sandy clay, or silty clay. The content of clay ranges from 43 to 50 percent. The content of gravel is 2 to 30 percent. The content of organic matter is 0 to 0.5 percent. Redoximorphic features range from 0 to 2 percent soft manganese masses. Reaction ranges from moderately acid to neutral.

The 3Bqm horizon is indurated to weakly cemented, becoming less cemented with increasing depth, and may have a silica and manganese capping up to 1/8 inch (3 mm) thick. The content of gravel is 10 to 50 percent. Redoximorphic features range from 10 to 90 percent manganese surface coatings on the upper surface.

Thermalrocks Series

The Thermalrocks series consists of very shallow, well drained soils that formed in residuum weathered from basalt. These soils are on the top of basalt plateaus on volcanic Sierra Nevada foothills. Slopes range from 2 to 30 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Lithic Haplohumults

Typical Pedon

Thermalrocks very gravelly loam, on a northwest-facing slope of 2 percent, under a cover of annual grasses and forbs, at an elevation of 970 feet (296 m). When described on 5/17/2001, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 3 cm); brown (10YR 5/3) very gravelly loam, dark brown (7.5YR 3/2) moist; 16 percent clay; weak thin platy structure parting to moderate fine granular; soft, friable, slightly sticky, nonplastic; many very fine and fine roots; many fine irregular pores; 15 percent subangular basalt cobbles and 20 percent subangular basalt gravel; strongly acid, pH 5.5 by Hellige-Truog; clear wavy boundary.

Bt—1 to 5 inches (3 to 13 cm); brown (10YR 5/3) very gravelly loam, dark brown (7.5YR 3/2) moist; 20 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; common fine irregular pores; 10 percent discontinuous faint clay films on surfaces along pores; 15 percent subangular basalt cobbles and 45 percent subangular basalt gravel; very strongly acid, pH 5.0 by Hellige-Truog; abrupt irregular boundary.

R—5 inches (13 cm); indurated basalt bedrock.

Type location: Butte County, California; about 2.6 miles north of Oroville, approximately 1,000 feet south and 2,800 feet east of the northwest corner of sec. 31, T. 20 N., R. 4 E.; 39 degrees, 33 minutes, 06.55 seconds north latitude and 121 degrees, 34 minutes, 01.19 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The depth to lithic bedrock is 5 to 10 inches (8 to 25 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about April to November (about 150 to 200 days). The particle-size control section averages 18 to 27 percent clay and 35 to 55 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. By sum of cations, base saturation ranges from 4 to 7 percent. Rock fragments on the surface range from 0 to 60 percent gravel, 0 to 50 percent cobbles, and 0 to 10 percent stones. Some pedons are cobbly, very cobbly, or gravelly silt loam throughout.

The A horizon has dry color of 10YR 3/3, 4/3, 4/4, or 5/3. Moist color is 7.5YR 2/2, 3/2, or 3/3 or 10YR 2/2, 3/2, or 3/3. Texture is cobbly loam, very gravelly loam, gravelly loam, loam, extremely gravelly loam, or very cobbly loam. The content of clay ranges from 14 to 18 percent. The horizon has 10 to 65 percent gravel and 5 to 40 percent cobbles. The content of organic matter is 4 to 8 percent. Reaction ranges from very strongly acid to slightly acid.

The Bt horizon has dry color of 10YR 3/3, 3/4, 4/4, 5/3, or 5/4 or 7.5YR 4/4. Moist color is 7.5YR 3/2, 3/4, or 4/2 or 10YR 2/2, 3/2, 3/3, or 4/2. Texture is very gravelly loam, very cobbly loam, very cobbly clay loam, extremely cobbly loam, or extremely gravelly loam. The content of clay ranges from 18 to 28 percent. The horizon has 10 to 90 percent gravel and 15 to 50 percent cobbles. The content of organic matter is 1.5 to 5 percent. Reaction ranges from very strongly acid to moderately acid.

Thompsonflat Series

The Thompsonflat series consists of very deep, moderately well drained soils that formed in alluvium derived from metamorphic and igneous rocks. These soils are on intermediate and high terraces. Slopes range from 0 to 30 percent. The mean annual precipitation is about 24 inches (610 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Ultic Haploxeralfs

Typical Pedon

Thompsonflat fine sandy loam, on a southeast-facing slope of 5 percent, under a cover of annual grasses, forbs, interior live oak, foothill pine, toyon, and redbud, at an elevation of 270 feet (82 m). When described on 9/26/2000, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (7.5YR 5/4) fine sandy loam, dark brown (7.5YR 3/3) moist; 15 percent clay; moderate medium platy structure parting to moderate fine subangular blocky; slightly hard, friable, nonsticky, nonplastic; common very fine roots; common fine irregular and few very fine tubular pores; 10 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt1—3 to 7 inches (8 to 18 cm); reddish brown (5YR 5/4) fine sandy loam, dark reddish brown (5YR 3/4) moist; 20 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; few very fine to medium

roots; common very fine tubular pores; 15 percent discontinuous distinct clay films on faces of peds; 5 percent well rounded gravel; moderately acid, pH 6.0 by Hellige-Truog; abrupt smooth boundary.

Bt2—7 to 11 inches (18 to 28 cm); yellowish red (5YR 5/6) sandy clay loam, reddish brown (2.5YR 4/4) moist; 28 percent clay; moderate fine subangular blocky structure; hard, firm, slightly sticky, slightly plastic; few fine and medium roots; common very fine tubular pores; 25 percent discontinuous distinct clay films on faces of peds; 5 percent well rounded gravel and 5 percent well rounded cobbles; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

Bt3—11 to 15 inches (28 to 38 cm); yellowish red (5YR 4/6) sandy clay, dark reddish brown (2.5YR 3/4) moist; 38 percent clay; moderate fine subangular blocky structure; hard, very firm, moderately sticky, moderately plastic; few fine roots; common very fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds; 5 percent well rounded cobbles and 10 percent well rounded gravel; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

2Bt4—15 to 22 inches (38 to 56 cm); brown (7.5YR 5/4) gravelly sandy clay, brown (7.5YR 4/3) moist; 43 percent clay; weak fine subangular blocky structure; hard, very firm, moderately sticky, very plastic; few fine roots; common very fine tubular pores; 50 percent discontinuous distinct clay films on faces of peds; 5 percent well rounded cobbles and 25 percent well rounded gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

3Btq1—22 to 35 inches (56 to 89 cm); reddish yellow (7.5YR 6/6) extremely gravelly sandy clay loam, strong brown (7.5YR 5/6) moist; 25 percent clay; weak very fine subangular blocky structure parting to single grain; noncemented, hard, firm, slightly sticky, slightly plastic; few fine roots; few very fine tubular pores; 10 percent discontinuous distinct clay films on rock fragments and 20 percent patchy distinct clay bridges on the upper faces of peds; 10 percent silica on rock fragments and on faces of peds; 15 percent well rounded cobbles and 55 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

3Btq2—35 to 45 inches (89 to 114 cm); reddish yellow (7.5YR 6/6) extremely gravelly coarse sandy loam, strong brown (7.5YR 5/6) moist; 12 percent clay; weak very fine subangular blocky structure parting to single grain; noncemented, hard, firm, nonsticky, nonplastic; few fine roots; few very fine tubular pores; 10 percent discontinuous distinct clay films on rock fragments and 40 percent patchy distinct clay bridges on the upper faces of peds; 10 percent silica on rock fragments and faces of peds; 25 percent well rounded cobbles and 55 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

3Btq3—45 to 53 inches (114 to 135 cm); reddish yellow (7.5YR 6/6) extremely gravelly coarse sandy loam, strong brown (7.5YR 4/6) moist; 5 percent clay; weak very fine subangular blocky structure parting to single grain; noncemented, hard, firm, nonsticky, nonplastic; few fine roots; few very fine tubular pores; 10 percent patchy distinct clay bridges on the upper faces of peds and 10 percent discontinuous distinct clay films on rock fragments; 15 percent silica on rock fragments and faces of peds; 5 percent fine irregular black (N 2/0) manganese masses; 20 percent well rounded cobbles and 45 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

3Btq4—53 to 66 inches (135 to 168 cm); reddish yellow (7.5YR 6/6) extremely gravelly coarse sandy loam, strong brown (7.5YR 4/6) moist; 5 percent clay; weak very fine subangular blocky structure parting to single grain; noncemented, hard, firm, nonsticky, nonplastic; few fine roots; few very fine tubular pores; 10 percent patchy distinct clay bridges on the upper faces of peds and 10 percent discontinuous distinct clay films on rock fragments; 15 percent silica between sand grains and on rock fragments; 5 percent fine irregular black (N 2/0)

manganese masses; 2 percent well rounded cobbles and 70 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

3Btq5—66 to 80 inches (168 to 203 cm); reddish yellow (7.5YR 6/6) extremely gravelly coarse sandy loam, strong brown (7.5YR 5/6) moist; 5 percent clay; weak very fine subangular blocky structure parting to single grain; noncemented, hard, firm, nonsticky, nonplastic; few fine roots; few very fine tubular pores; 10 percent patchy distinct clay bridges on the upper faces of peds and 10 percent discontinuous distinct clay films on rock fragments; 15 percent silica between sand grains and on rock fragments; 5 percent fine irregular black (N 2/0) manganese masses; 15 percent well rounded cobbles and 70 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 0.5 mile north of downtown Oroville, approximately 3,350 feet east and 1,800 feet south of the northeast corner of projected sec. 8, T. 19 N., R. 4 E.; 39 degrees, 31 minutes, 14 seconds north latitude and 121 degrees, 33 minutes, 6 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

The thickness of the solum is more than 80 inches (203 cm), depth to the 3Btq horizon is 22 to 75 inches (56 to 190 cm) or more, and depth to 2Bt horizon is 15 to 43 inches (38 to 109 cm). The mean annual soil temperature is 61 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 23 to 34 percent clay and 4 to 34 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. A fluctuating water table can occur at a depth of 40 to 80 inches (102 to 203 cm) from December through April. Rock fragments on the surface range from 0 to 10 percent gravel and 0 to 2 percent cobbles.

The A horizon has dry color of 7.5YR 5/3, 5/4, or 6/4 or 5YR 5/4. Moist color is 7.5YR 3/2, 3/3, 3/4, 4/2, or 4/3 or 5YR 3/3 or 3/4. Texture is fine sandy loam, loam, sandy loam, gravelly fine sandy loam, gravelly sandy loam, gravelly loam, or sandy clay loam. The content of clay ranges from 12 to 22 percent. The content of gravel is 1 to 25 percent. The content of organic matter is 0.5 to 1.2 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 5YR 4/6, 5/4, 5/6, or 6/6 or 7.5YR 5/4 or 6/4. Moist color is 5YR 3/4, 4/4, or 4/6; 2.5YR 3/4, 3/6, 4/4, or 4/6; or 7.5YR 3/4 or 4/4. Texture is fine sandy loam, loam, sandy clay loam, sandy clay, gravelly loam, gravelly sandy loam, gravelly sandy clay loam, or gravelly clay loam. The content of clay ranges from 18 to 38 percent. The horizon has 0 to 25 percent gravel, 0 to 15 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 0.1 to 0.5 percent. Reaction ranges from moderately acid to neutral.

The 2Bt horizon has dry color of 7.5YR 5/4, 6/4, or 7/3 or 2.5YR 5/4, 5/6, or 6/6. Moist color is 7.5YR 4/3, 4/4, or 4/6; 5YR 4/6; or 2.5YR 4/4 or 4/6. Texture is gravelly sandy clay, gravelly clay, very gravelly clay, extremely gravelly sandy clay, sandy clay, or clay. The content of clay ranges from 38 to 55 percent. The horizon has 2 to 70 percent gravel and 0 to 10 percent cobbles. The content of organic matter is 0.1 to 0.5 percent. Reaction ranges from moderately acid to moderately alkaline.

The 3Btq horizon has dry color of 7.5YR 5/6, 6/6, or 7/6. Moist color is 7.5YR 4/6 or 5/6. Texture is extremely gravelly sandy clay loam, extremely gravelly coarse sandy loam, gravelly sandy loam, sandy clay loam, or loamy sand. The content of clay ranges from 5 to 38 percent. The horizon has 10 to 70 percent gravel and 0 to 25 percent cobbles. Redoximorphic features range from 0 to 60 percent soft manganese masses and 0 to 2 percent soft oxidized iron masses, noncemented or very weakly cemented. The content of organic matter is 0 to 0.3 percent. Reaction ranges from slightly acid to moderately alkaline.

Timberisland Series

The Timberisland series consists of deep, well drained soils that formed in mixed tephra and colluvium and residuum derived from Lovejoy basalt. These soils are on the benches, tops, and side slopes of basalt ridges on volcanic Sierra Nevada mountains. Slopes range from 0 to 30 percent. The mean annual precipitation is about 80 inches (2,032 mm), and the mean annual air temperature is about 51 degrees F (11 degrees C).

Taxonomic class: Medial-skeletal, ferrihydritic, mesic Humic Haploxerands

Typical Pedon

Timberisland very gravelly medial sandy loam, on a southwest-facing slope of 30 percent, under a cover of mixed conifers, at an elevation of 4,325 feet (1,318 m). When described on 6/20/1995, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1.5 inches (0 to 3 cm); fresh needles, leaves, cones, and twigs.

Oe—1.5 to 3 inches (3 to 8 cm); moderately decomposed litter of needles, leaves, cones, and twigs.

A1—3 to 6 inches (8 to 15 cm); brown (10YR 5/3) very gravelly medial sandy loam, very dark brown (10YR 2/2) moist; 16 percent clay; weak fine subangular blocky structure parting to single grain; loose, very friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine irregular pores; 40 percent subangular basalt gravel; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 9.0; abrupt smooth boundary.

A2—6 to 14 inches (15 to 36 cm); brown (10YR 5/3) very gravelly medial sandy loam, very dark brown (10YR 2/2) moist; 16 percent clay; weak fine subangular blocky structure parting to single grain; loose, very friable, slightly sticky, slightly plastic; many fine, common very fine, and few medium roots; many very fine irregular pores; 40 percent subangular basalt gravel and 5 percent subangular basalt cobbles; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 11.2; abrupt smooth boundary.

Bw1—14 to 25 inches (36 to 64 cm); brown (10YR 5/3) very gravelly medial sandy loam, very dark grayish brown (10YR 3/2) moist; 18 percent clay; weak fine subangular blocky structure; loose, very friable, slightly sticky, slightly plastic; many fine, common very fine, and few medium roots; many very fine irregular pores; 5 percent clay films on rock fragments, on faces of peds, and in pores; 40 percent subangular basalt gravel and 10 percent subangular basalt cobbles; strongly acid, pH 5.5 by Hellige-Truog; NaF pH 11.2; clear smooth boundary.

Bw2—25 to 35 inches (64 to 89 cm); yellowish brown (10YR 5/4) extremely cobbly medial sandy loam, dark brown (10YR 3/3) moist; 12 percent clay; weak fine subangular blocky structure; loose, very friable, nonsticky, slightly plastic; common fine and medium roots; many very fine irregular pores; 35 percent subangular basalt gravel and 35 percent subangular basalt cobbles; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 11.1; gradual wavy boundary.

Bw3—35 to 48 inches (89 to 122 cm); yellowish brown (10YR 5/4) extremely cobbly medial sandy loam, dark brown (10YR 3/3) moist; 12 percent clay; weak fine subangular blocky structure; slightly hard, very friable, nonsticky, slightly plastic; common fine roots; many very fine irregular pores; 10 percent subangular basalt gravel and 80 percent subangular basalt cobbles; moderately acid, pH 5.8 by Hellige-Truog; NaF pH 10.3; abrupt smooth boundary.

R—48 inches (122 cm); indurated basalt; very few roots in fractures more than 12 inches (31 cm) apart.

Type location: Butte County, California; about 2.2 miles northeast of Camp Eighteen, approximately 600 feet west and 1,450 feet north of the southeast corner of sec. 25, T. 21 N., R. 7 E.; 39 degrees, 38 minutes, 48 seconds north latitude and 121 degrees, 8 minutes, 16 seconds west longitude; NAD27; USGS Quad: Cascade, California.

Range in Characteristics

The depth to lithic bedrock is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 10 to 18 percent clay and 40 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is ferrihydritic. Rock fragments on the surface range from 5 to 40 percent gravel, 0 to 25 percent cobbles, 0 to 15 percent stones, and 0 to 5 percent boulders.

The A1 horizon has dry color of 10YR 3/2, 4/2, 4/3, or 5/3. Moist color is 10YR 2/1, 2/2, 3/1, or 3/2; 7.5YR 3/2; or N 2/0. Texture is very gravelly medial sandy loam, gravelly medial sandy loam, medial sandy loam, or gravelly medial coarse sandy loam. The content of clay ranges from 5 to 18 percent. The horizon has 5 to 40 percent gravel, 0 to 10 percent cobbles, and 0 to 10 percent stones. The content of organic matter is 15 to 52 percent. By ammonium acetate, base saturation ranges from 20 to 40 percent. Acid oxalate extractable Al plus 1/2 Fe ranges from 2.0 to 2.5. P retention ranges from 80 to 85. The content of glass ranges from 2 to 5 percent. NaF pH is 9.0 to 10.0. Reaction ranges from strongly acid to slightly acid.

The A2 horizon has dry color of 10YR 3/2, 4/2, 4/3, or 5/3. Moist color is 10YR 2/1, 2/2, 3/1, or 3/2; 7.5YR 3/2; or N 2/0. Texture is medial sandy loam, gravelly medial sandy loam, very gravelly medial sandy loam, or gravelly medial coarse sandy loam. The content of clay ranges from 5 to 18 percent. The horizon has 5 to 40 percent gravel, 0 to 10 percent cobbles, and 0 to 10 percent stones. The content of organic matter is 10 to 20 percent. By ammonium acetate, base saturation ranges from 5 to 10 percent. Acid oxalate extractable Al plus 1/2 Fe ranges from 2.0 to 3.5. P retention ranges from 85 to 95. The content of glass ranges from 2 to 5 percent. NaF pH is 10.0 to 11.5. Reaction ranges from strongly acid to slightly acid.

The Bw1 horizon has dry color of 10YR 4/2, 5/2, or 5/3 or 7.5YR 4/3. Moist color is 10YR 2/1, 3/2, or 3/3 or 7.5YR 4/3. Texture is gravelly medial sandy loam, very gravelly medial sandy loam, or extremely gravelly medial sandy loam. The content of clay ranges from 8 to 18 percent. The horizon has 30 to 40 percent gravel, 0 to 20 percent cobbles, 0 to 10 percent stones, and 0 to 5 percent boulders. The content of organic matter is 10 to 18 percent. By ammonium acetate, base saturation ranges from 2 to 5 percent. Acid oxalate extractable Al plus 1/2 Fe ranges from 2.0 to 3.5. P retention ranges from 85 to 95. The content of glass ranges from 1 to 5 percent. NaF pH is 11 to 11.5. Reaction ranges from strongly acid to slightly acid.

The Bw2 and Bw3 horizons have dry color of 10YR 4/2, 5/2, 5/3, or 5/4; 7.5YR 4/2, 4/3, 4/4, or 5/3; or 2.5Y 5/4. Moist color is 10YR 3/2 or 3/3; 7.5YR 3/2, 3/3, 3/4, or 4/3; or 2.5Y 3/2. Texture is extremely cobbly medial fine sandy loam, extremely cobbly medial sandy loam, extremely gravelly medial sandy loam, or very cobbly medial sandy loam. The content of clay ranges from 10 to 22 percent. The horizons have 10 to 60 percent gravel, 25 to 80 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders. The content of organic matter is 2 to 10 percent. By ammonium acetate, base saturation ranges from 2 to 5 percent. Acid oxalate extractable Al plus 1/2 Fe ranges from 2.0 to 3.5. P retention ranges from 85 to 96. The content of glass ranges from 1 to 5 percent. NaF pH is 10.0 to 11.5. Reaction ranges from very strongly acid to slightly acid.

Toadtown Series

The Toadtown series consists of very deep, well drained soils that formed in weathered tephra over residuum and colluvium derived from metadiorite, metavolcanic rocks, gabbro, or diorite. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 2 to 70 percent. The mean annual precipitation is about 72 inches (1,829 mm), and the mean annual air temperature is about 53 degrees F (12 degrees C).

Taxonomic class: Fine, parasesquic, mesic Andic Haplohumults

Typical Pedon

Toadtown loam, on an east-southeast-facing slope of 7 percent, under a cover of mixed conifers, at an elevation of 3,590 feet (1,094 m). When described on 11/28/1995, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); pine needles.

Oe—2 to 3 inches (5 to 8 cm); partially decomposed forest litter, mostly pine needles.

A—3 to 5 inches (8 to 13 cm); reddish brown (5YR 5/4) loam, reddish brown (5YR 4/3) moist; 26 percent clay; moderate medium subangular blocky structure parting to strong fine granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine and common fine roots; many very fine and fine tubular and many medium and common coarse irregular pores; noneffervescent; 12 percent gravel; moderately acid, pH 5.7 by pH meter 1:1 water; NaF pH 10.5; clear smooth boundary.

Bt1—5 to 8 inches (13 to 20 cm); yellowish red (5YR 5/6) loam, reddish brown (5YR 4/4) moist; 27 percent clay; moderate medium subangular blocky structure parting to strong fine granular; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine and many medium roots; many very fine to medium irregular and tubular and common coarse irregular pores; many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 14 percent gravel; strongly acid, pH 5.5 by pH meter 1:1 water; NaF pH 10.3; clear smooth boundary.

Bt2—8 to 13 inches (20 to 33 cm); yellowish red (5YR 5/6) clay loam, red (2.5YR 4/6) moist; 29 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and coarse and many fine and medium roots; many very fine to coarse tubular pores; common distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 10 percent gravel; strongly acid, pH 5.4 by pH meter 1:1 water; NaF pH 10.1; clear smooth boundary.

Bt3—13 to 18 inches (33 to 46 cm); reddish yellow (5YR 6/6) clay, red (2.5YR 4/6) moist; 40 percent clay; strong medium subangular blocky structure; moderately hard, firm, slightly sticky, moderately plastic; common very fine and many fine to coarse roots; many very fine to coarse tubular pores; many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 5 percent gravel; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 9.6; clear smooth boundary.

Bt4—18 to 27 inches (46 to 69 cm); reddish yellow (5YR 6/6) clay, red (2.5YR 5/6) moist; 43 percent clay; strong fine and medium subangular blocky structure; hard, very firm, slightly sticky, moderately plastic; common very fine and coarse and many fine and medium roots; many very fine and fine tubular pores; many distinct continuous clay films on faces of peds and in pores; noneffervescent; 2 percent gravel; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 9.6; gradual smooth boundary.

Bt5—27 to 51 inches (69 to 130 cm); reddish yellow (5YR 7/6) clay loam, reddish yellow (5YR 6/6) moist; 31 percent clay; strong medium angular blocky structure;

moderately hard, firm, slightly sticky, moderately plastic; common very fine and fine roots; common very fine and fine tubular pores; many distinct continuous and common prominent continuous clay films on faces of peds and in pores; noneffervescent; 1 percent gravel; strongly acid, pH 5.3 by pH meter 1:1 water; NaF pH 9.4; gradual irregular boundary.

Bt6—51 to 65 inches (130 to 165 cm); reddish yellow (5YR 7/6) loam, yellowish red (5YR 5/8) moist; 27 percent clay; moderate medium angular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; many distinct discontinuous and few prominent discontinuous clay films on faces of peds and in pores; noneffervescent; 2 percent gravel; strongly acid, pH 5.3 by pH meter 1:1 water; clear irregular boundary.

Bt7—65 to 75 inches (165 to 190 cm); reddish yellow (5YR 7/6) loam, yellowish red (5YR 5/6) moist; 18 percent clay; weak medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine and fine tubular pores; few prominent discontinuous and many distinct discontinuous clay films on faces of peds and in pores; noneffervescent; 1 percent gravel; strongly acid, pH 5.2 by pH meter 1:1 water; clear wavy boundary.

Crt—75 to 79 inches (190 to 201 cm); reddish yellow (7.5YR 8/6) loam, yellowish red (5YR 5/6) moist; 17 percent clay; massive; slightly sticky, slightly plastic; few very fine and fine roots; common very fine and fine tubular pores; common prominent discontinuous clay films in pores; noneffervescent; 1 percent gravel; strongly acid, pH 5.2 by pH meter 1:1 water.

Type location: Butte County, California; about 1 mile southwest of Powellton, approximately 600 feet north and 1,500 feet west of the southeast corner of sec. 24, T. 24 N., R. 3 E.; 39 degrees, 55 minutes, 0.7 second north latitude and 121 degrees, 34 minutes, 57.98 seconds west longitude; NAD27; USGS Quad: Stirling City, California.

Range in Characteristics

The depth to paralithic bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 54 to 57 degrees F (12 to 14 degrees C). The soil moisture control section is dry in all parts from about July to October (about 90 days). The particle-size control section averages 35 to 45 percent clay and 2 to 5 percent rock fragments, mostly gravel. Mineralogy is parasesquic. Acid oxalate extractable Al plus $^1/_2$ Fe ranges from 1.1 to 1.57 to a depth of 13 inches (33 cm). Rock fragments on the surface range from 0 to 35 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 5YR 4/3, 4/4, 5/4, 5/6, or 6/4; 2.5YR 4/6 or 5/6; or 7.5YR 5/4 or 6/6. Moist color is 5YR 3/3, 4/3, or 4/4; 2.5YR 3/3, 3/4, 3/6, or 4/4; or 7.5YR 3/3. Texture is loam, gravelly loam, sandy loam, gravelly sandy loam, or very gravelly loam. The content of clay ranges from 15 to 27 percent. The content of gravel is 0 to 45 percent. The content of organic matter is 10 to 15 percent. By sum of cations, base saturation ranges from 15 to 25 percent. By ammonium acetate, CEC ranges from 20 to 30. NaF pH is 10 to 11. Reaction is moderately acid or slightly acid.

The upper part of the Bt horizon has dry color of 2.5YR 4/6, 5/6, or 6/6 or 5YR 4/4, 5/4, 5/6, 6/4, or 6/6. Moist color is 2.5YR 3/4, 3/6, 4/4, or 4/6 or 5YR 4/4. Texture is loam, gravelly loam, clay loam, silty clay loam, sandy clay loam, or gravelly clay loam. The content of clay ranges from 23 to 37 percent. The content of gravel is 0 to 20 percent, and the content of cobbles is 0 to 10 percent. The content of organic matter is 3 to 8 percent. By sum of cations, base saturation ranges from 10 to 20 percent. By ammonium acetate, CEC ranges from 12 to 20. NaF pH is 10 to 11. Reaction ranges from strongly acid to slightly acid.

The middle part of the Bt horizon has dry color of 5YR 5/6, 5/8, 6/6, or 7/6 or 2.5YR 4/6, 5/6, 4/8, 5/8, 6/6, or 7/6. Moist color is 2.5YR 3/6, 4/4, 4/6, 4/8, 5/6, or 6/8

or 5YR 5/8. Texture is silty clay, gravelly clay, clay, clay loam, or gravelly clay loam. The content of clay ranges from 35 to 60 percent. The content of gravel is 0 to 30 percent, and the content of cobbles is 0 to 10 percent. The content of organic matter is 0.8 to 3 percent. By sum of cations, base saturation ranges from 10 to 20 percent. By ammonium acetate, CEC ranges from 9 to 12. NaF pH is 9 to 10. Reaction ranges from strongly acid to slightly acid.

The lower part of the Bt horizon has dry color of 2.5YR 4/8, 5/6, or 5/8; 5YR 5/6, 6/6, 6/8, or 7/6; or 7.5YR 5/6, 6/6, 6/8, or 7/6. Moist color is 2.5YR 3/6, 4/6, 4/8, or 5/6; 5YR 4/6, 5/6, 5/8, or 6/6; or 7.5YR 4/6, 5/6, or 5/8. Texture is clay loam, loam, silt loam, silty clay loam, cobbly silty clay loam, cobbly clay loam, gravelly clay loam, or gravelly loam. The content of clay ranges from 18 to 35 percent. The content of gravel is 0 to 30 percent, and the content of cobbles is 0 to 20 percent. The content of organic matter is 0.1 to 0.3 percent. By sum of cations, base saturation ranges from 2 to 10 percent. By ammonium acetate, CEC ranges from 5 to 12. NaF pH is 9 to 10. Reaction ranges from strongly acid to slightly acid.

Trainer Series

The Trainer series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are on stream terraces. Slopes are 0 to 1 percent. The mean annual precipitation is about 20 inches (508 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Fine-loamy, mixed, active, thermic Aquic Haploxerepts

Typical Pedon

Trainer loam, on a slope of less than 1 percent, in a fallow rice paddy, at an elevation of 85 feet (26 m). When described on 4/4/1985, the soil was moist throughout. (Colors are for dry soil unless otherwise noted).

Ap—0 to 4 inches (0 to 10 cm); yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 3/4) moist; weak medium granular structure; very hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; few very fine and fine tubular pores and common very fine and fine interstitial pores; slightly acid, pH 6.5; clear smooth boundary.

A—4 to 9 inches (10 to 23 cm); yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 3/4) moist; weak medium granular structure; very hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine and fine tubular and interstitial pores; common fine distinct dark reddish brown (5YR 3/4), few coarse prominent very dark grayish brown (2.5Y 3/2), and few medium prominent grayish brown (10YR 5/2) and brown (10YR 5/3) oxidized iron masses along root channels; few fine black (10YR 2/1) iron-manganese masses and concretions; slightly alkaline, pH 7.5; clear wavy boundary.

Bt1—9 to 16 inches (23 to 41 cm); brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; very hard, very friable, slightly sticky, slightly plastic; few very fine roots; few very fine and coarse tubular pores; few thin clay films in pores; few fine and medium black (10YR 2/1) iron-manganese masses and concretions; slightly alkaline, pH 7.8; clear smooth boundary.

Bt2—16 to 23 inches (41 to 58 cm); brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; very hard, very friable, slightly sticky, slightly plastic; few very fine tubular pores; few thin clay films in pores and bridging sand grains; few fine and medium black (10YR 2/1) iron-manganese masses; moderately alkaline, pH 8.0; gradual smooth boundary.

Bt3—23 to 36 inches (58 to 91 cm); very pale brown (10YR 7/4) sandy loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; very hard, very friable, slightly sticky, slightly plastic; few very fine tubular pores; common thin clay films in pores and bridging sand grains; common fine distinct brown (7.5YR 4/4) oxidized iron masses; few fine and medium black (10YR 2/1) iron-manganese masses and concretions; moderately alkaline, pH 8.0; gradual smooth boundary.

BCt—36 to 48 inches (91 to 122 cm); reddish yellow (7.5YR 6/6) sandy loam, brown (7.5YR 4/4) moist; massive; slightly hard and very friable, nonsticky, nonplastic; few very fine tubular pores; few thin clay films bridging sand grains; common medium grayish brown (10YR 5/2) bleached sand coatings on faces of peds; few fine and medium black (10YR 2/1) iron-manganese masses and concretions; moderately alkaline, pH 8.0; clear smooth boundary.

C1—48 to 59 inches (122 to 150 cm); reddish yellow (7.5YR 6/6) sandy loam, strong brown (7.5YR 5/6) moist; massive; slightly hard, very friable, nonsticky, nonplastic; moderately alkaline, pH 8.0; abrupt smooth boundary.

C2—59 to 66 inches (150 to 168 cm); reddish yellow (7.5YR 6/6) coarse sandy loam, strong brown (7.5YR 4/6) moist; massive; slightly hard, very friable, nonsticky, nonplastic; moderately alkaline, pH 8.0.

Type location: Yuba County, California; about 4.5 miles northeast of Marysville on Highway 20 to Loma Rica Road, approximately 600 feet west and 1,150 feet north of the southeast corner of sec. 22, T. 16 N., R. 4 E.; 39 degrees, 13 minutes, 29 seconds north latitude and 121 degrees, 30 minutes, 10 seconds west longitude; NAD27; USGS Quad: Yuba City, California.

Range in Characteristics

The mean annual soil temperature is 64 to 66 degrees F (18 to 19 degrees C). The soil temperature is above 47 degrees F (8 degrees C) the entire year. Unless the soils are irrigated, the soil moisture control section is dry in all parts from May 15 through October 31 and is moist in some or all parts from November 1 through May 15. A fluctuating water table can occur at a depth of 36 and 60 inches (91 to 152 cm) from January through December. Reaction ranges from slightly acid to moderately alkaline. Some pedons have a Bw horizon.

The A horizon has dry color of 10YR 5/4, 5/3, 4/4, or 4/3 or 7.5YR 5/4, 4/4, or 4/3. Moist color is 10YR 3/4, 3/3, or 3/2 or 7.5YR 3/3. Texture is loam or sandy clay loam. The content of clay ranges from 18 to 27 percent.

The Bt or Bw horizon has dry color of 10YR 7/4 or 4/3 or 7.5YR 7/4, 6/4, 5/4, 4/4, 4/3, or 6/6. Moist color is 10YR 5/4 or 3/3 or 7.5YR 5/6, 5/4, 4/4, 3/4, 3/3, or 4/6. Texture is sandy loam, loam, or sandy clay loam. The content of clay ranges from 18 to 27 percent.

The C horizon has dry color of 7.5YR 5/4, 3/4, or 6/6 or 10YR 4/4. Moist color is 7.5YR 3/4, 4/3, 4/4, 4/6, or 5/6. Texture is sandy loam, coarse sandy loam, loam, or fine sandy loam. The content of clay ranges from 10 to 18 percent.

Tuscan Series

The Tuscan series consists of shallow, somewhat poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are on strath terraces on Cascade foothills and on fan terraces. Slopes range from 0 to 3 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Clayey, mixed, superactive, thermic, shallow Typic Durixeralfs

Typical Pedon

Tuscan gravelly loam, on a south-facing slope of 1 percent, under a cover of filaree, spike rush, and clover, at an elevation of 207 feet (63 m). When described on 3/29/2000, the soil was dry to a depth of 1.5 inches (4 cm), very slightly moist from 1.5 to 11 inches (4 to 28 cm), and dry below 11 inches (28 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 4 cm); very pale brown (10YR 7/3) gravelly loam, brown (10YR 4/3) moist; 27 percent clay; moderate thin and medium platy structure parting to moderate fine subangular blocky; very hard, friable, moderately sticky, moderately plastic; many very fine roots; few very fine and fine irregular and tubular pores; 20 percent medium threadlike strong brown (7.5YR 5/6 dry) oxidized iron masses lining pores; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt1—2 to 4 inches (4 to 11 cm); brown (7.5YR 5/3) clay loam, brown (7.5YR 4/3) moist; 34 percent clay; moderate thick platy structure parting to moderate coarse and medium subangular blocky; extremely hard, friable, moderately sticky, moderately plastic; common very fine roots; few fine and very fine tubular pores; 80 percent continuous distinct clay films; 10 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt2—4 to 7 inches (11 to 19 cm); brown (7.5YR 5/3) gravelly clay, brown (7.5YR 4/3) moist; 40 percent clay; moderate medium and fine subangular blocky structure; very hard, friable, very sticky, very plastic; common very fine roots; few fine and very fine tubular pores; 80 percent continuous distinct clay films; 5 percent cobbles and 10 percent gravel; neutral, pH 7.2 by Hellige-Truog; gradual smooth boundary.

Bt3—7 to 11 inches (19 to 28 cm); brown (7.5YR 5/3) cobbly clay, brown (7.5YR 4/3) moist; 50 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, very sticky, very plastic; common very fine roots; few fine and very fine tubular pores; 80 percent continuous distinct clay films; 15 percent cobbles and 15 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; abrupt smooth boundary.

2Bqm—11 inches (28 cm); very strongly cemented duripan; cemented by silica; 20 percent manganese coatings at the top of the horizon; 40 percent cobbles and 40 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog.

Type location: Butte County, California; about 0.875 mile east-southeast of the Durham-Pentz Road/Highway 99 overpass, approximately 550 feet north and 2,100 feet west of the southeast corner of sec. 25, T. 21 N., R. 2 E.; 39 degrees, 38 minutes, 26 seconds north latitude and 121 degrees, 41 minutes, 53 seconds west longitude; NAD27; USGS Quad: Hamlin Canyon, California.

Range in Characteristics

Depth to the duripan is 10 to 20 inches (925 to 51 cm). The duripan is underlain by volcanic sandstone or volcanic sediments. The mean annual soil temperature is 62 to 65 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 150 days). The particle-size control section averages 35 to 55 percent clay and 15 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 2 inches (5 cm) below the surface of the soil from November through March. Redoximorphic features occur as oxidized iron masses in the A horizon, iron-manganese masses in the A and Bt horizons, iron-manganese concretions in the Bt horizon, and a manganese capping on the 2Bqm horizon. Rock fragments on the surface range from 0 to 25 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 7.5YR 5/4, 6/3, 6/4, or 7/3 or 10YR 5/3, 6/3, or 7/3. Moist color is 10YR 4/2 or 4/3, 7.5YR 4/3, or 5YR 3/3. Texture is loam, gravelly loam, or sandy clay loam. The content of clay ranges from 20 to 27 percent. The content of gravel is 5 to 25 percent. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 4/3, 5/3, 5/4, 5/6, 6/4, 6/6, or 7/4; 5YR 4/3, 4/4, 5/3, or 5/4; or 10YR 5/3. Moist color is 7.5YR 4/3, 4/4, or 5/3; 5YR 3/3, 4/3, or 4/4; or 10YR 4/3. Texture is clay loam, gravelly clay loam, very gravelly clay loam, very cobbly clay loam, clay, gravelly clay, very gravelly clay, extremely gravelly clay, or cobbly clay. The content of clay ranges from 30 to 55 percent. The horizon has 5 to 50 percent gravel and 0 to 25 percent cobbles. Reaction is neutral or slightly alkaline.

Tuscan Taxadjunct

The Tuscan taxadjunct consists of moderately deep, somewhat poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are on mounds on fan terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine, mixed, superactive, thermic Typic Durixeralfs

Typical Pedon

Tuscan taxadjunct gravelly clay loam, on a south-facing slope of 1 percent, under a cover of filaree, soft chess, and goldfields, at an elevation of 275 feet (84 m). When described on 4/2/1997, the soil was slightly moist from a depth of 2 to 29 inches (5 to 74 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 4 cm); brown (7.5YR 4/2) gravelly clay loam, dark reddish brown (5YR 3/2) moist; 30 percent clay; moderate thick platy structure parting to strong thin and medium platy and then to strong fine subangular blocky; hard, slightly sticky, moderately plastic; many very fine roots; common very fine vesicular and tubular pores; 10 percent fine irregular iron-manganese masses and 15 percent fine and medium threadlike strong brown (7.5YR 5/6) oxidized iron masses between peds; 15 percent volcanic gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

Bt1—2 to 5 inches (4 to 13 cm); dark reddish gray (5YR 4/2) gravelly clay, dark reddish brown (5YR 3/2) moist; 40 percent clay; strong coarse prismatic structure parting to strong coarse angular blocky; very hard, firm, moderately sticky, very plastic; many very fine roots between peds; common very fine vesicular and tubular pores; 80 percent continuous prominent clay films on faces of peds; 5 percent fine irregular iron-manganese masses between peds; 15 percent volcanic gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bt2—5 to 13 inches (13 to 33 cm); dark reddish gray (5YR 4/2) gravelly clay, dark reddish brown (5YR 3/3) moist; 40 percent clay; moderate coarse prismatic structure parting to moderate medium subangular blocky; very hard, firm, moderately sticky, very plastic; common very fine roots; few very fine vesicular and tubular pores; 80 percent continuous prominent clay films on faces of peds; 15 percent volcanic gravel; slightly alkaline, pH 7.8 by Hellige-Truog; gradual wavy boundary.

Bt3—13 to 23 inches (33 to 58 cm); brown (7.5YR 5/3) gravelly clay loam, reddish brown (5YR 4/3) moist; 38 percent clay; moderate medium subangular blocky structure; very hard, friable, moderately sticky, very plastic; common very fine roots; common very fine vesicular and tubular pores; 90 percent continuous prominent clay films on faces of peds; 2 percent fine spherical iron-manganese

concretions throughout; 5 percent volcanic rock cobbles and 15 percent volcanic gravel; moderately alkaline, pH 8.0 by Hellige-Truog; gradual wavy boundary.

Bt4—23 to 29 inches (58 to 74 cm); light brown (7.5YR 6/4) very gravelly clay loam, brown (7.5YR 4/3) moist; 39 percent clay; moderate fine and medium subangular blocky structure; friable, moderately sticky, very plastic; common very fine roots; common very fine vesicular and tubular pores; 50 percent discontinuous distinct clay films on faces of peds; 5 percent fine spherical iron-manganese concretions throughout; 15 percent volcanic cobbles and 40 percent volcanic gravel; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt wavy boundary.

2Bqm—29 inches (74 cm); indurated duripan; extremely cobbly material; no manganese or silica capping; matted roots on top of the duripan.

Type location: Butte County, California; about 6.4 miles northeast of Nord, approximately 1,000 feet east and 900 feet south of the northwest corner of sec. 16, T. 23 N., R. 1 E.; 39 degrees, 51 minutes, 47 seconds north latitude and 121 degrees, 52 minutes, 38 seconds west longitude; NAD27; USGS Quad: Nord, California.

Range in Characteristics

Depth to the duripan is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 35 to 40 percent clay and 15 to 30 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 12 inches (30 cm) below the surface of the soil from December through April. Rock fragments on the surface range from 0 to 15 percent gravel and 0 to 10 percent cobbles.

The A horizon has dry color of 7.5YR 4/2 or 5/3 or 10YR 5/2. Moist color is 7.5YR 3/2 or 3/3 or 5YR 3/2 or 3/3. Texture is gravelly clay loam, cobbly loam, clay loam, or loam. The content of clay ranges from 18 to 33 percent. The horizon has 5 to 25 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 2 to 5 percent. Redoximorphic features range from 0 to 10 percent iron-manganese masses and 0 to 15 percent oxidized iron masses. Reaction ranges from moderately acid to neutral.

The Bt horizon has dry color of 7.5YR 4/3, 5/3, 5/4, 6/4, or 7/4 or 5YR 4/2. Moist color is 5YR 3/2, 3/3, 4/3, or 4/6 or 7.5YR 3/2, 3/3, 3/4, 4/2, or 4/3. Texture is gravelly clay, gravelly clay loam, very gravelly clay loam, extremely gravelly clay loam, cobbly clay loam, cobbly loam, clay, or loam. The content of clay ranges from 25 to 46 percent. The horizon has 5 to 50 percent gravel, 0 to 40 percent cobbles, and 0 to 5 percent stones. The content of organic matter is 0 to 1.2 percent. Redoximorphic features range from 0 to 5 percent iron-manganese masses, 0 to 10 percent manganese masses, and 0 to 5 percent spherical iron-manganese concretions. Reaction ranges from slightly acid to moderately alkaline.

The Tuscan taxadjunct is a taxadjunct because it has a nongravelly duripan rather than a gravelly one and is moderately deep rather than shallow. These differences do not significantly affect the use, management, or interpretations of the soils.

Tusccoll Series

The Tusccoll series consists of very deep, well drained soils that formed in colluvium derived from volcanic rocks. These soils are on backslopes in canyons in the Cascade Mountains. Slopes range from 30 to 70 percent. The mean annual precipitation is about 65 inches (1,651 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Fine-loamy, mixed, semiactive, mesic Andic Palexeralfs

Typical Pedon

Tusccoll gravelly loam, on a northeast-facing slope of 45 percent, under a cover of Douglas-fir, California black oak, redbud, dogwood, and Pacific poison oak, at an elevation of 1,940 feet (591 m). When described on 6/24/1998, the soil was very slightly moist to a depth of 23 inches (58 cm), slightly moist from 23 to 49 inches (58 to 124 cm), and moist below 49 inches (124 cm). (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; clear smooth boundary.

Oe—1 to 2 inches (3 to 5 cm); moderately decomposed plant material; clear smooth boundary.

A—2 to 6 inches (5 to 15 cm); light reddish brown (5YR 6/4) gravelly loam, reddish brown (5YR 4/3) moist; 25 percent clay; moderate fine and medium granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine to medium tubular and irregular and few coarse tubular pores; 15 percent gravel; neutral, pH 7.0 by Hellige-Truog; NaF pH 10.0; clear smooth boundary.

Bt1—6 to 14 inches (15 to 36 cm); light reddish brown (5YR 6/4) gravelly loam, reddish brown (5YR 4/4) moist; 26 percent clay; moderate fine subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; many fine and medium, few coarse, and common very fine roots; common very fine to medium tubular and irregular and few coarse tubular pores; 40 percent discontinuous faint clay films; 25 gravel; neutral, pH 6.7 by Hellige-Truog; NaF pH 10.5; clear smooth boundary.

Bt2—14 to 23 inches (36 to 58 cm); light reddish brown (5YR 6/4) gravelly loam, reddish brown (5YR 4/4) moist; 27 percent clay; weak fine and medium subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; few very fine, fine, and coarse and many medium roots; common very fine to medium irregular and tubular and few coarse tubular pores; 40 percent discontinuous faint clay films; 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.5; gradual smooth boundary.

Bt3—23 to 33 inches (58 to 84 cm); reddish yellow (5YR 6/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 29 percent clay; weak fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; few very fine and fine and common medium and coarse roots; common very fine to medium tubular and irregular pores; 50 percent discontinuous faint clay films; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.

Bt4—33 to 41 inches (84 to 104 cm); yellowish red (5YR 5/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 31 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; few very fine and fine and common medium roots; common very fine and fine irregular and tubular and few medium tubular pores; 50 percent discontinuous faint clay films; 15 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 10.0; gradual smooth boundary.

Bt5—41 to 49 inches (104 to 124 cm); yellowish red (5YR 5/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 33 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; few very fine, fine, and coarse and common medium roots; common very fine and fine tubular and irregular and few medium tubular pores; 70 percent continuous distinct clay films; 15 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 9.9; clear smooth boundary.

Bt6—49 to 70 inches (124 to 179 cm); yellowish red (5YR 5/6) gravelly clay loam, yellowish red (5YR 4/6) moist; 38 percent clay; moderate fine and medium

subangular blocky structure; extremely hard, friable, moderately sticky, moderately plastic; few very fine to coarse roots; common very fine and fine tubular and irregular and few medium tubular pores; 80 percent continuous distinct clay films; 10 percent cobbles and 15 percent gravel; slightly acid, pH 6.3 by Hellige-Truog; NaF pH 9.7.

Type location: Butte County, California; about 0.75 mile west of Forest Ranch Cemetery, approximately 700 feet south and 600 feet west of the northeast corner of sec. 31, T. 24 N., R. 3 E.; 39 degrees, 54 minutes, 2 seconds north latitude and 121 degrees, 40 minutes, 31 seconds west longitude; NAD83; USGS Quad: Cohasset, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 52 to 59 degrees F (11 to 15 degrees C). The particle-size control section averages 22 to 35 percent clay and 5 to 35 percent rock fragments, mostly gravel. Mineralogy is mixed. NaF pH is 9.5 to 11.0 to a depth of 10 to 20 inches (25 to 51 cm). Rock fragments on the surface range from 5 to 25 percent gravel, 0 to 20 percent cobbles, 0 to 20 percent stones, and 0 to 5 percent boulders.

The A horizon has dry color of 7.5YR 5/3, 5/4, 6/3, 6/4, or 7/4 or 5YR 6/4. Moist color is 5YR 3/3 or 4/3 or 7.5YR 4/3. Texture is gravelly sandy loam, gravelly loam, or cobbly loam. The content of clay ranges from 17 to 25 percent. The horizon has 5 to 30 percent gravel and 0 to 15 percent cobbles. NaF pH is 9.5 to 11.0. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 5/3, 5/4, 5/6, 6/4, 6/6, or 7/4 or 5YR 5/4, 5/6, 6/4, or 6/6. Moist color is 7.5YR 3/3, 4/3, 4/4, 5/4, 4/6, or 6/6 or 5YR 3/3, 4/3, 4/4, or 4/6. Texture is loam, gravelly loam, cobbly loam, very cobbly loam, clay loam, gravelly clay loam, very gravelly clay loam, cobbly clay loam, very cobbly clay loam, gravelly sandy clay loam, or very gravelly sandy clay loam. The content of clay ranges from 20 to 39 percent. The horizon has 2 to 40 percent gravel, 0 to 40 percent cobbles, and 0 to 15 percent stones. NaF pH is 9.8 to 11.0 in the upper part of the horizon. Reaction ranges from very strongly acid to neutral.

Typic Haploxeralfs

Typic Haploxeralfs consist of moderately deep or deep, well drained soils that formed in colluvium, residuum, and alluvium derived from volcanic rocks. These soils are on side slopes in canyons on Cascade foothills. Slopes range from 2 to 50 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Thermic Typic Haploxeralfs

Typical Pedon

Typic Haploxeralfs gravelly loam, on a south-southwest-facing slope of 45 percent, under a cover of yellow starthistle and wild oat with scattered interior live oak, Pacific poison oak, and foothill pine, at an elevation of 530 feet (162 m). When described on 11/9/1998, the soil was moist to a depth of 8 inches (20 cm) and dry below that depth. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; 27 percent clay; moderate very fine and fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine to medium irregular and tubular pores; 25 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt1—2 to 8 inches (5 to 20 cm); grayish brown (10YR 5/2) gravelly clay loam, dark grayish brown (10YR 4/2) moist; 29 percent clay; strong fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; many very fine roots; common very fine to medium tubular pores; 40 percent discontinuous faint clay films; 20 percent gravel; neutral, pH 7.3 by Hellige-Truog; clear smooth boundary.

Bt2—8 to 16 inches (20 to 41 cm); grayish brown (10YR 5/2) very gravelly clay loam, dark grayish brown (10YR 4/2) moist; 35 percent clay; strong fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine and fine roots; common very fine to medium tubular pores; 80 percent continuous distinct clay films; 15 percent cobbles and 25 percent gravel; neutral, pH 7.3 by Hellige-Truog; gradual smooth boundary.

Bt3—16 to 27 inches (41 to 69 cm); grayish brown (10YR 5/2) very gravelly clay loam, dark grayish brown (10YR 4/2) moist; 33 percent clay; strong fine and medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 15 percent cobbles and 30 percent gravel; neutral, pH 7.3 by Hellige-Truog; gradual smooth boundary.

Bt4—27 to 40 inches (69 to 102 cm); grayish brown (10YR 5/2) very gravelly clay loam, dark grayish brown (10YR 4/2) moist; 32 percent clay; strong fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 15 percent cobbles and 40 percent gravel; neutral, pH 7.3 by Hellige-Truog; abrupt irregular boundary.

2Cr—40 inches (102 cm); white (10YR 8/1), weakly cemented volcanic sandstone, brown (10YR 4/3) moist; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 0.25 mile northeast of Horseshoe Lake, approximately 7,100 feet north and 2,100 feet west of the southeast corner of sec. 17, T. 22 N., R. 2 E.; in an unsectionized area in the Arroyo Chico Land Grant; 39 degrees, 46 minutes, 29 seconds north latitude and 121 degrees, 46 minutes, 34 seconds west longitude; NAD83; USGS Quad: Richardson Springs, California.

Range in Characteristics

The depth to paralithic or lithic bedrock is 20 to 60 inches (51 to 102 cm). The mean annual soil temperature is 59 to 67 degrees F (15 to 19 degrees C). The soil moisture control section is dry in all parts from about June to October (about 150 days). The particle-size control section averages 27 to 45 percent clay and 15 to 65 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 0 to 25 percent gravel, 0 to 20 percent cobbles, 0 to 20 percent stones, and 0 to 20 percent boulders.

The A horizon has dry color of 7.5YR 5/2, 5/3, 5/4, 6/4, or 7/3 or 10YR 5/2, 6/2, or 6/3. Moist color is 7.5YR 3/2, 4/2, or 4/3; 10YR 3/2 or 4/2; or 5YR 3/2 or 4/3. Texture is loam, gravelly loam, very gravelly loam, clay loam, or sandy clay loam. The content of clay ranges from 20 to 30 percent. The horizon has 5 to 25 percent gravel and 0 to 15 percent cobbles. Reaction ranges from slightly acid to slightly alkaline.

The Bt horizon has dry color of 7.5YR 5/2, 5/3, 5/4, 6/3, 6/4, or 7/3; 10YR 5/2, 6/2, 6/3, or 7/3; or 5YR 5/4. Moist color is 7.5YR 3/3, 4/2, 4/3, 4/4, or 5/3; 10YR 4/2 or 5/3; or 5YR 3/3 or 4/3. Texture is clay loam, gravelly clay loam, very gravelly clay loam, extremely gravelly clay loam, cobbly clay loam, very cobbly clay loam, clay, very gravelly clay, very cobbly clay, extremely gravelly clay, sandy clay loam, gravelly sandy clay loam, very stony sandy clay loam, sandy clay, gravelly sandy clay, cobbly sandy clay, or very gravelly sandy clay. The content of clay ranges from 27 to 50 percent. The horizon has 5 to 45 percent gravel, 0 to 30 percent cobbles, and 0 to 25 percent stones. Reaction ranges from neutral to moderately alkaline.

Typic Haploxeralfs, Magnesic

Typic Haploxeralfs, magnesic, consist of moderately deep to very deep, well drained soils that formed in residuum and colluvium derived from serpentinitic ultramafic rocks. These soils are on ridgetops and side slopes on ultramafic Sierra Nevada mountains. Slopes range from 15 to 80 percent. The mean annual precipitation is about 60 inches (1,524 mm), and the mean annual air temperature is about 55 degrees F (13 degrees C).

Taxonomic class: Magnesic, mesic Typic Haploxeralfs

Typical Pedon

Typic Haploxeralfs, magnesic, very gravelly loam, on a south-southeast-facing slope of 42 percent, under a cover of whiteleaf manzanita, whitethorn ceanothus, foothill pine, California laurel, California buckthorn, toyon, and scrub oak, at an elevation of 2,578 feet (786 m). When described on 9/25/1997, the soil was dry to a depth of 32 inches (81 cm) and very slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (7.5YR 5/4) very gravelly loam, dark brown (7.5YR 3/4) moist; 24 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; common very fine and fine roots; many very fine and fine and common medium tubular pores; 10 percent cobbles and 30 percent gravel; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

Bt1—3 to 7 inches (8 to 18 cm); reddish brown (5YR 5/4) gravelly clay loam, reddish brown (5YR 4/4) moist; 28 percent clay; strong fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; common very fine and fine and few medium irregular and tubular pores; 30 percent discontinuous faint clay films on faces of peds and 70 percent clay bridges; 5 percent cobbles and 25 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bt2—7 to 12 inches (18 to 30 cm); reddish brown (5YR 5/4) very gravelly clay loam, reddish brown (5YR 4/4) moist; 35 percent clay; strong fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and fine roots; common very fine and fine and few medium irregular and tubular pores; 70 percent discontinuous faint clay films on faces of peds; 15 percent cobbles and 35 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bt3—12 to 18 inches (30 to 46 cm); reddish brown (5YR 4/4) gravelly clay, dark reddish brown (2.5YR 3/4) moist; 42 percent clay; strong fine and medium subangular blocky structure; hard, very firm, moderately sticky, very plastic; common very fine and fine roots; common very fine and fine and few medium irregular and tubular pores; 80 percent continuous distinct clay films on faces of peds; 5 percent cobbles and 25 percent gravel; neutral, pH 7.2 by Hellige-Truog; clear smooth boundary.

Bt4—18 to 24 inches (46 to 61 cm); yellowish red (5YR 4/6) very gravelly clay, yellowish red (5YR 4/6) moist; 45 percent clay; strong fine and medium subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; common very fine and fine and few medium roots; few very fine and fine irregular and tubular pores; 90 percent continuous distinct clay films on faces of peds; 15 percent cobbles and 20 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Btss1—24 to 32 inches (61 to 81 cm); strong brown (7.5YR 5/6) very gravelly clay, reddish brown (5YR 4/4) moist; 50 percent clay; moderate coarse prismatic

structure parting to strong coarse angular blocky; extremely hard, very firm, very sticky, very plastic; common very fine and fine and few medium roots; few very fine and fine irregular and tubular pores; 50 percent slickensides and 90 percent continuous prominent clay films on faces of peds; 15 percent cobbles and 40 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Btss2—32 to 42 inches (81 to 107 cm); brown (7.5YR 4/3) very gravelly clay, strong brown (7.5YR 5/6) moist; 42 percent clay; strong fine and medium subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; few very fine to medium roots; few very fine and fine irregular and tubular pores; 20 percent slickensides and 90 percent continuous prominent clay films on faces of peds; 20 percent cobbles and 40 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; abrupt irregular boundary.

B´t5—42 to 54 inches (107 to 137 cm); brown (7.5YR 4/3) extremely cobbly clay loam, strong brown (7.5YR 5/6) moist; 38 percent clay; strong fine and medium subangular blocky structure; extremely hard, very firm, moderately sticky, very plastic; few very fine and fine roots; few very fine and fine irregular and tubular pores; 80 percent continuous prominent clay films on faces of peds and in pores; 40 percent gravel and 40 percent cobbles; slightly alkaline, pH 7.5 by Hellige-Truog; abrupt irregular boundary.

R—54 inches (137 cm); indurated serpentinite bedrock.

Type location: Butte County, California; about 1.5 miles northeast of Magalia, approximately 2,400 feet north and 1,500 feet east of the southwest corner of sec. 29, T. 23 N., R. 4 E.; 39 degrees, 49 minutes, 13 seconds north latitude and 121 degrees, 33 minutes, 21 seconds west longitude; NAD83; USGS Quad: Paradise East, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 80 inches (51 to 203 cm). The mean annual soil temperature is 52 to 59 degrees F (11 to 15 degrees C). The soil moisture control section is dry in all parts from about July to October (about 120 days). The particle-size control section averages 25 to 50 percent clay and 35 to 50 percent rock fragments, mostly gravel and cobbles. Mineralogy is magnesic. Rock fragments on the surface range from 10 to 60 percent gravel, 5 to 35 percent cobbles, 0 to 20 percent stones, and 0 to 15 percent boulders.

The A horizon has dry color of 7.5YR 5/4 or 6/4 or 5YR 5/4. Moist color is 7.5YR 3/4 or 4/3, 5YR 4/3, or 2.5YR 3/4. Texture is gravelly loam, very gravelly loam, or gravelly clay loam. The content of clay ranges from 22 to 32 percent. The horizon has 20 to 40 percent gravel, 0 to 20 percent cobbles, and 0 to 10 percent stones. Reaction is neutral.

The Bt horizon has dry color of 5YR 4/4, 4/6, 5/4, or 5/6 or 7.5YR 6/4, 7/4, or 7/6. Moist color is 5YR 4/4 or 4/6, 2.5YR 3/4 or 4/6, or 7.5YR 4/6. Texture is clay loam, clay, or the gravelly, very gravelly, extremely gravelly, or cobbly analogs of those textures. The content of clay ranges from 27 to 45 percent. The horizon has 0 to 40 percent gravel, 0 to 45 percent cobbles, and 0 to 15 percent stones. Reaction is neutral or slightly alkaline.

The Btss horizon has dry color of 7.5YR 4/3, 4/4, 4/6, or 5/6; 5YR 6/4; or 2.5YR 5/6 or 6/6. Moist color is 5YR 4/4, 5/4, or 5/6; 7.5YR 5/6; or 2.5YR 4/6. Texture is extremely gravelly clay loam, gravelly clay, very gravelly clay, or very cobbly clay. The content of clay ranges from 35 to 50 percent. The horizon has 25 to 65 percent gravel, 0 to 45 percent cobbles, and 0 to 15 percent stones. Reaction is neutral or slightly alkaline.

Typic Petraquepts

Typic Petraquepts consist of shallow, poorly drained soils that formed in alluvium derived from basalt. These soils are in swales on strath terraces on Southern Cascade foothills. Slopes are 0 to 1 percent. The mean annual precipitation is about 25 inches (635 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Clayey, smectitic, thermic, shallow Typic Petraquepts

Typical Pedon

Typic Petraquepts silty clay, on a slope of 1 percent, under a cover of annual grasses and forbs, at an elevation of 184 feet (56 m). When described on 5/4/2000, the soil was slightly moist at a depth of 3 to 11 inches (8 to 28 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); dark gray (10YR 4/1) silty clay, very dark gray (10YR 3/1) moist; 50 percent clay; moderate thin platy structure parting to moderate very fine subangular blocky; very hard, extremely firm, very sticky, very plastic; many very fine roots; few very fine tubular pores; 20 percent fine irregular strong brown (7.5YR 5/6 dry) oxidized iron masses on surfaces along root channels; 10 percent subrounded basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Bss—3 to 11 inches (8 to 28 cm); gray (10YR 5/1) gravelly silty clay, dark gray (10YR 4/1) moist; 55 percent clay; strong medium angular blocky structure; extremely hard, extremely firm, very sticky, very plastic; common very fine roots; few very fine tubular pores; 10 percent slickensides; 5 percent fine irregular black (N 2/0 dry) manganese masses in the matrix and 15 percent fine irregular strong brown (7.5YR 5/6 dry) oxidized iron masses on surfaces along root channels; 5 percent subrounded basalt cobbles and 25 percent subrounded basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

2Bqm—11 inches (28 cm); indurated duripan; cemented by silica; many very fine roots on top of the horizon; 70 percent fine platy black (N 2/0 dry) manganese masses at the top of the horizon; 5 percent rounded basalt cobbles and 50 percent well rounded basalt gravel; silica- and manganese-cemented capping, 1/8 to 1/4 inch thick, that is discontinuous because well rounded to subrounded basalt and chert gravel and cobbles protrude through the top of the duripan.

Type location: Butte County, California; about 5.3 miles northwest of Oroville, approximately 1,450 feet west and 2,500 feet north of the southeast corner of sec. 28, T. 20 N., R. 3 E.; 39 degrees, 33 minutes, 33 seconds north latitude and 121 degrees, 38 minutes, 28 seconds west longitude; NAD83; USGS Quad: Shippee, California.

Range in Characteristics

Depth to the duripan is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 40 to 60 percent clay and 20 to 35 percent rock fragments, mostly gravel. Mineralogy is smectitic. The content of organic matter is 0 to 1 percent in the A horizon and less than 1 percent in the Bss horizon. By ammonium acetate, base saturation ranges from 90 to 100 percent throughout the profile. Reversible, surface-initiated cracks 0.25 to 1 inch (0.6 to 2.5 cm) wide extend from the surface to the duripan from May through October (150 to 180 days) when the soils are not irrigated. A fluctuating water table can occur between the top of the duripan and the surface of the soil from November through April. The soils are frequently ponded for very long periods; as much as 6 inches of water ponds on the surface from November through April. Redoximorphic features, such as oxidized iron masses, iron-manganese

masses, and manganese masses, occur in all horizons. Rock fragments on the surface range from 5 to 10 percent gravel and 2 to 5 percent cobbles. Some pedons do not have slickensides or a Bss horizon.

The A horizon has dry color of 10YR 4/1, 4/2, or 5/2. Moist color is 10YR 3/1 or 3/2. Texture is silty clay, clay, or clay loam. The content of clay ranges from 38 to 50 percent. The horizon has 5 to 10 percent gravel and 0 to 5 percent cobbles. Reaction ranges from strongly acid to slightly acid.

The Bss horizon has dry color of 10YR 4/2, 5/1, or 5/2. Moist color is 10YR 3/2 or 4/1. Texture is gravelly silty clay. The content of clay ranges from 42 to 55 percent. The horizon has 25 to 35 percent gravel and 0 to 5 percent cobbles. Reaction ranges from strongly acid to slightly acid.

Typic Xerofluvents

Typic Xerofluvents consist of very deep, somewhat excessively drained soils that formed in alluvium derived from hydraulic mine deposits from the Cherokee Gold Mine. These soils are on stream terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Mixed, superactive, nonacid, thermic Typic Xerofluvents

Reference Pedon

Typic Xerofluvents gravelly loamy sand, on a southeast-facing slope of 2 percent, under a cover of cottonwood, black walnut, valley oak, California sycamore, Pacific poison oak, and annual grasses, at an elevation of 305 feet (93 m). When described on 4/10/2001, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); light yellowish brown (10YR 6/4) gravelly loamy sand, dark brown (10YR 3/3) moist; 8 percent clay; weak medium subangular blocky structure parting to weak fine granular; soft, friable, nonsticky, nonplastic; many fine and medium roots; many fine irregular pores; 20 percent subrounded mixed gravel; slightly acid, pH 6.5 by Hellige-Truog; clear wavy boundary.

C1—3 to 11 inches (8 to 28 cm); light yellowish brown (10YR 6/4) gravelly coarse sandy loam, brown (10YR 4/3) moist; 10 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, nonsticky, nonplastic; common very fine and fine and many medium roots; common fine irregular pores; 25 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

C2—11 to 20 inches (28 to 51 cm); yellowish brown (10YR 5/4) gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; 12 percent clay; moderate coarse subangular blocky structure; hard, firm, nonsticky, nonplastic; many medium and coarse and common very fine roots; common fine tubular pores; 30 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog; abrupt smooth boundary.

C3—20 to 24 inches (51 to 61 cm); light yellowish brown (10YR 6/4) sand, yellowish brown (10YR 5/4) moist; 2 percent clay; single grain; loose, very friable, nonsticky, nonplastic; common fine and medium roots; common fine irregular pores; 15 percent medium yellowish brown (10YR 5/6) oxidized iron masses; 10 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog; abrupt smooth boundary.

C4—24 to 31 inches (61 to 79 cm); light yellowish brown (10YR 6/4) gravelly sand, yellowish brown (10YR 5/4) moist; 4 percent clay; weak fine subangular blocky structure parting to single grain; soft, friable, nonsticky, nonplastic; common fine

and medium and few very fine roots; common fine irregular pores; 30 percent medium black (10YR 2/1) manganese masses and 35 percent medium dark yellowish brown (10YR 4/6) oxidized iron masses; 20 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog; abrupt wavy boundary.

C5—31 to 45 inches (79 to 114 cm); very pale brown (10YR 7/4) silt loam, brown (10YR 5/3) moist; 15 percent clay; moderate medium and coarse subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; common medium and coarse and few very fine roots; common very fine tubular pores; 30 percent medium dark gray (10YR 4/1) manganese masses and 50 percent medium dark yellowish brown (10YR 4/6) oxidized iron masses; 5 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog; abrupt wavy boundary.

C6—45 to 51 inches (114 to 130 cm); very pale brown (10YR 8/2) gravelly sand, light brownish gray (10YR 6/2) moist; 2 percent clay; single grain; loose, very friable, nonsticky, nonplastic; common medium and coarse roots; few fine irregular pores; 15 percent medium yellowish brown (10YR 5/6) oxidized iron masses; 30 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog; abrupt wavy boundary.

C7—51 to 66 inches (130 to 168 cm); light gray (10YR 7/2) silt, 40 percent yellowish brown (10YR 5/6) and 60 percent light brownish gray (10YR 6/2) moist; 10 percent clay; moderate coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few medium and coarse roots; few very fine irregular pores; 30 percent fine dark gray (10YR 4/1) iron depletions; 10 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog; abrupt wavy boundary.

C8—66 to 84 inches (168 to 213 cm); very pale brown (10YR 8/2) very gravelly coarse sand, light brownish gray (10YR 6/2) moist; 1 percent clay; single grain; loose, very friable, nonsticky, nonplastic; common fine irregular pores; 30 percent fine yellowish brown (10YR 5/6) oxidized iron masses; 50 percent subrounded mixed rock gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

C9—84 to 95 inches (213 to 241 cm); very pale brown (10YR 7/4) extremely gravelly coarse sand, yellowish brown (10YR 5/4) moist; 4 percent clay; single grain; loose, very friable, nonsticky, nonplastic; common fine irregular pores; 50 percent fine dark yellowish brown (10YR 4/6) oxidized iron masses; 70 percent subrounded mixed gravel; neutral, pH 6.8 by Hellige-Truog.

The reference pedon is an example of the soils in this category. The properties represented in map units 360 and 361 vary. The particle-size classes represented by this description include coarse-loamy and sandy-skeletal.

Type location: Butte County, California; about 4.5 miles west of Cherokee, approximately 500 feet west and 500 feet north of the southeast corner of sec. 34, T. 21 N., R. 3 E.; 39 degrees, 37 minutes, 30 seconds north latitude and 121 degrees, 37 minutes, 23 seconds west longitude; NAD83; USGS Quad: Cherokee, California.

Range in Characteristics

The depth to buried alluvium or sandstone or weathered basalt is 40 to 110 inches or more (102 to 279 cm or more). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section averages 2 to 9 percent clay and 17 to 50 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur at a depth of 20 to 94 inches (51 to 240 cm) from December through April. Rock fragments on the surface range from 0 to 10 percent gravel.

The A horizon has dry color of 10YR 4/3, 5/2, 5/3, 6/2, 6/3, or 6/4. Moist color is 10YR 3/2, 3/3, 4/2, 4/3, or 4/4. Texture is gravelly loamy sand, sandy loam, fine sandy

loam, gravelly loam, loam, or gravelly loamy coarse sand. The content of clay ranges from 5 to 18 percent. The content of gravel is 0 to 30 percent. The content of organic matter is 0 to 0.5 percent. Reaction ranges from extremely acid to slightly alkaline.

The C horizon has dry color of 10YR 5/3, 5/4, 6/2, 6/3, 6/4, 6/6, 7/2, 7/3, 7/4, 7/6, 8/2, 8/3, or 8/4; 7.5YR 6/4, 7/4, or 7/6; or 2.5Y 6/2, 6/3, or 6/4. Moist color is 10YR 3/3, 3/4, 4/2, 4/3, 4/4, 4/6, 5/2, 5/3, 5/4, 5/6, 6/2, 6/3, or 6/4; 7.5YR 4/4, 5/4, or 5/6; or 2.5Y 5/3 or 5/4. Texture is sand, gravelly sand, very gravelly sand, gravelly coarse sand, very gravelly loamy coarse sand, very gravelly coarse sand, extremely gravelly coarse sand, very gravelly coarse sandy loam, sandy loam, very gravelly sandy loam, fine sandy loam, very fine sandy loam, gravelly very fine sandy loam, loam, gravelly loam, silt, silt loam, or silty clay loam. The content of clay ranges from 1 to 32 percent. The content of gravel is 5 to 80 percent. The content of organic matter is 0 to 0.2 percent. Redoximorphic features occur as oxidized iron masses and manganese masses. Reaction ranges from moderately acid to moderately alkaline.

The 2Ab, 2Btb or 2Bw horizon, where it occurs, has dry color of 10YR 4/2, 5/1, 5/2, or 5/3 or 7.5YR 6/2. Moist color is 10YR 2/2, 3/1, 3/2, or 3/3 or 7.5YR 4/2. Texture is sandy loam, loam, sandy clay loam, or clay loam. The content of clay ranges from 10 to 35 percent. The content of gravel is 5 to 15 percent. Redoximorphic features occur as oxidized iron masses. Reaction ranges from neutral to moderately alkaline.

Ultic Haploxeralfs

Ultic Haploxeralfs consist of moderately deep or deep, well drained soils that formed in colluvium and residuum derived from volcanic rocks. These soils are on side slopes in canyons on Cascade foothills. Slopes range from 30 to 100 percent. The mean annual precipitation is about 41 inches (1,041 mm), and the mean annual air temperature is about 58 degrees F (14 degrees C).

Taxonomic class: Mesic Ultic Haploxeralfs

Typical Pedon

Ultic Haploxeralfs gravelly loam, on a northeast-facing slope of 45 percent, under a cover of scrub oak, manzanita, Pacific poison oak, California laurel, and scattered foothill pine, at an elevation of 1,075 feet (328 m). When described on 9/29/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 4 inches (0 to 10 cm); light brown (7.5YR 6/3) gravelly loam, brown (7.5YR 4/2) moist; 24 percent clay; moderate medium and coarse subangular blocky structure parting to strong fine and medium granular; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine to medium and common coarse irregular and tubular pores; 20 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bt1—4 to 10 inches (10 to 25 cm); light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 4/3) moist; 26 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium and coarse roots; many very fine to coarse tubular pores; 40 percent continuous faint clay films; 15 percent gravel; slightly acid, pH 6.6 by Hellige-Truog; clear smooth boundary.

Bt2—10 to 18 inches (25 to 46 cm); light brown (7.5YR 6/4) gravelly clay loam, brown (7.5YR 4/3) moist; 29 percent clay; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to coarse roots; many very fine to medium and common coarse tubular pores; 60 percent continuous faint clay films; 15 percent gravel; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

Bt3—18 to 35 inches (46 to 89 cm); light brown (7.5YR 6/4) gravelly clay loam, brown (7.5YR 4/3) moist; 35 percent clay; strong fine and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films; 15 percent gravel; neutral, pH 6.7 by Hellige-Truog; clear smooth boundary.

Bt4—35 to 48 inches (89 to 122 cm); light brown (7.5YR 6/4) gravelly clay, brown (7.5YR 4/3) moist; 45 percent clay; strong fine and medium subangular blocky structure; rigid, friable, very sticky, very plastic; common very fine and fine roots; common very fine and fine and few medium tubular pores; 90 percent continuous distinct clay films; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

Crt—48 inches (122 cm); extremely weakly cemented volcanic conglomerate bedrock.

Type location: Butte County, California; about 1.1 miles southwest of Centerville, approximately 1,400 feet south and 375 feet east of the northwest corner of sec. 8, T. 22 N., R. 3 E.; 39 degrees, 46 minutes, 51 seconds north latitude and 121 degrees, 40 minutes, 25 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to paralithic or lithic bedrock is 20 to 60 inches (51 to 152 cm). The mean annual soil temperature is 55 to 59 degrees F (13 to 15 degrees C). The soil moisture control section is dry in all parts from about June to October (about 150 days). The particle-size control section averages 27 to 35 percent clay and 10 to 50 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 0 to 25 percent gravel, 0 to 20 percent cobbles, 0 to 20 percent stones, and 0 to 5 percent boulders. Some pedons have 20 to 35 percent clay in the lower part of the Bt horizon.

The A horizon has dry color of 7.5YR 5/3, 6/2, 6/3, or 6/4. Moist color is 7.5YR 3/2, 3/3, or 4/2. Texture is gravelly loam or very gravelly loam. The content of clay ranges from 20 to 26 percent. The content of gravel is 15 to 40 percent. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the Bt horizon has dry color of 7.5YR 5/3, 5/4, 6/3, or 6/4. Moist color is 7.5YR 4/2, 4/3, or 4/4. Texture is gravelly loam, cobbly loam, clay loam, gravelly clay loam, very gravelly clay loam, cobbly clay loam, or very cobbly clay loam. The content of clay ranges from 23 to 35 percent. The content of gravel is 5 to 50 percent, the content of cobbles is 0 to 20 percent, and the content of stones is 0 to 20 percent. Reaction ranges from slightly acid to slightly alkaline.

The lower part of the Bt horizon has dry color of 7.5YR 5/4, 6/3, or 6/4. Moist color is 7.5YR 4/3 or 4/4. Texture is gravelly clay loam, very gravelly clay loam, or gravelly clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 15 to 50 percent, the content of cobbles is 0 to 20 percent, and the content of stones is 0 to 20 percent. Reaction is slightly acid or neutral.

Ultic Haploxeralfs, Conglomerate

Ultic Haploxeralfs, conglomerate, consist of moderately deep to very deep, well drained soils that formed in colluvium and residuum derived from marine conglomerate. These soils are on side slopes in canyons on Cascade foothills. Slopes range from 3 to 100 percent. The mean annual precipitation is about 57 inches (1,447 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Thermic Ultic Haploxeralfs

Typical Pedon

Ultic Haploxeralfs, conglomerate, gravelly clay loam, on a northeast-facing slope of 53 percent, under a cover of canyon live oak, California black oak, foothill pine, Pacific poison oak, toyon, tanoak, hedgehog dogtail, and a few ponderosa pine trees, at an elevation of 1,200 feet (366 m). When described on 9/10/1998, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 2 inches (0 to 5 cm); slightly decomposed plant material; abrupt smooth boundary.

A—2 to 6 inches (5 to 15 cm); pale brown (10YR 6/3) gravelly clay loam, brown (10YR 4/3) moist; 29 percent clay; strong fine and medium granular structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine and fine and few medium roots; many very fine to coarse tubular and irregular pores; 25 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bt1—6 to 10 inches (15 to 25 cm); light yellowish brown (10YR 6/4) gravelly clay loam, brown (7.5YR 4/3) moist; 31 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium roots; many very fine to medium tubular pores; 50 percent discontinuous faint clay films; 15 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt2—10 to 17 inches (25 to 43 cm); light brown (7.5YR 6/4) clay loam, brown (7.5YR 4/2) moist; 33 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many fine and medium and common very fine roots; many very fine to medium tubular pores; 60 percent discontinuous faint clay films; 10 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt3—17 to 28 inches (43 to 71 cm); light brown (7.5YR 6/4) cobbly clay loam, brown (7.5YR 4/3) moist; 35 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine to medium tubular pores; 60 percent discontinuous faint clay films; 10 percent gravel and 20 percent cobbles; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt4—28 to 40 inches (71 to 102 cm); light brown (7.5YR 6/4) very cobbly clay loam, brown (7.5YR 4/4) moist; 36 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; 70 percent continuous distinct clay films; 20 percent gravel and 25 percent cobbles; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

2Bt5—40 to 50 inches (102 to 127 cm); strong brown (7.5YR 5/6) very gravelly clay, brown (7.5YR 4/4) moist; 42 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, very sticky, very plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; 90 percent continuous prominent clay films; 20 percent cobbles and 25 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

2Bt6—50 to 71 inches (127 to 180 cm); strong brown (7.5YR 5/6) very gravelly sandy clay loam, brown (7.5YR 4/4) moist; 32 percent clay; massive; slightly hard, friable, moderately sticky, moderately plastic; common very fine to medium roots; many very fine and fine and common medium tubular pores; 50 percent discontinuous distinct clay films; 15 cobbles and 40 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

2Bt7—71 to 84 inches (180 to 213 cm); strong brown (7.5YR 5/6) very gravelly sandy clay loam, brown (7.5YR 4/4) moist; 29 percent clay; massive; slightly hard, friable, moderately sticky, moderately plastic; few very fine to medium roots; many very fine and fine and common medium tubular pores; 50 percent discontinuous

distinct clay films; 20 percent cobbles and 40 percent gravel; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Butte County, California; about 0.25 mile southeast of the Ponderosa Way bridge over Big Chico Creek, approximately 1,300 feet south and 120 feet west of the northeast corner of sec. 1, T. 23 N., R. 2 E.; 39 degrees, 53 minutes, 8 seconds north latitude and 121 degrees, 41 minutes, 43 seconds west longitude; NAD83; USGS Quad: Cohasset, California.

Range in Characteristics

The depth to paralithic bedrock is 20 to more than 80 inches (51 to 203 cm). The mean annual soil temperature is 59 to 62 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about June to November (about 150 days). The particle-size control section averages 30 to 40 percent clay and 20 to 70 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 5 to 25 percent gravel, 0 to 10 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 10YR 5/4 or 6/3; 7.5YR 5/4, 6/2, 6/3, or 7/3; or 5YR 6/4. Moist color is 10YR 4/3 or 4/4; 7.5YR 3/2, 4/2, 4/3, or 5/4; or 5YR 4/3. Texture is gravelly loam, very gravelly loam, gravelly clay loam, or very gravelly sandy clay loam. The content of clay ranges from 23 to 30 percent. The horizon has 15 to 45 percent gravel, 0 to 10 percent cobbles, and 0 to 3 percent stones. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 10YR 5/4, 6/4, or 7/4; 7.5YR 4/4, 6/2, 6/3, 6/4, 7/4, or 7/6; or 5YR 5/4, 5/6, or 6/4. Moist color is 10YR 4/4 or 5/4; 7.5YR 4/2, 4/3, 4/4, 5/4, 5/6, or 6/6; or 5YR 4/3, 4/4, 4/6, or 5/6. Texture is clay loam, gravelly clay loam, very gravelly clay loam, cobbly clay loam, very cobbly clay loam, gravelly sandy clay loam, very gravelly sandy clay loam, or extremely gravelly sandy clay loam. The content of clay ranges from 25 to 40 percent. The horizon has 10 to 45 percent gravel, 0 to 30 percent cobbles, and 0 to 5 percent stones. Reaction is slightly acid or moderately acid.

The 2Bt horizon has dry color of 5YR 4/4, 4/6, 6/4, or 7/6 or 7.5YR 5/6. Moist color is 2.5YR 3/4, 3/6, or 4/6; 5YR 4/4 or 5/8; or 7.5YR 4/4. Texture is very gravelly clay loam, very gravelly sandy clay loam, gravelly clay, very gravelly clay, cobbly clay, very cobbly clay, or extremely cobbly clay. The content of clay ranges from 30 to 50 percent. The horizon has 10 to 45 percent gravel, 10 to 40 percent cobbles, and 0 to 5 percent stones. Reaction ranges from slightly acid to strongly acid.

Ultic Haploxeralfs, Mesic

Ultic Haploxeralfs, mesic, consist of moderately deep or deep, well drained soils that formed in residuum derived from mudflow breccia. These soils are on the top of ridges on Cascade foothills. Slopes range from 2 to 30 percent. The mean annual precipitation is about 50 inches (1,270 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Mesic Ultic Haploxeralfs

Typical Pedon

Ultic Haploxeralfs, mesic, gravelly loam, on a south-facing slope of 17 percent, under a cover of manzanita, scrub oak, and Pacific poison oak, at an elevation of 1,915 feet (584 m). When described on 9/27/1999, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.
A—1 to 4 inches (3 to 10 cm); reddish brown (5YR 5/4) gravelly loam, reddish brown (5YR 4/4) moist; 23 percent clay; strong fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine to medium and common coarse tubular and irregular pores; 25 percent gravel; slightly acid, pH 6.4 by pH meter 1:1 water; clear smooth boundary.
Bt1—4 to 9 inches (10 to 23 cm); reddish yellow (5YR 6/6) cobbly loam, reddish brown (5YR 4/4) moist; 25 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine to medium and common coarse roots; many very fine to medium and few coarse tubular and irregular pores; 80 percent continuous distinct clay films on faces of peds; 10 percent gravel and 20 percent cobbles; slightly acid, pH 6.6 by pH meter 1:1 water; clear smooth boundary.
Bt2—9 to 23 inches (23 to 58 cm); reddish yellow (5YR 6/6) very stony clay loam, reddish brown (2.5YR 5/4) moist; 31 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; many very fine to medium and common coarse roots; many very fine to medium tubular pores; 80 percent continuous distinct clay films on faces of peds; 10 percent gravel, 20 percent cobbles, and 20 percent stones; slightly acid, pH 6.5 by pH meter 1:1 water; gradual smooth boundary.
Bt3—23 to 32 inches (58 to 81 cm); reddish yellow (5YR 6/6) very cobbly clay loam, red (2.5YR 5/6) moist; 34 percent clay; moderate fine and medium subangular blocky structure; moderately hard, firm, moderately sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine to medium tubular pores; 90 percent continuous distinct clay films on faces of peds; 10 percent stones, 20 percent gravel, and 20 percent cobbles; slightly acid, pH 6.5 by pH meter 1:1 water; abrupt smooth boundary.
Bt4—32 to 42 inches (81 to 107 cm); light red (2.5YR 6/6) extremely stony clay loam, red (2.5YR 5/6) moist; 37 percent clay; moderate fine and medium subangular blocky structure; moderately hard, firm, moderately sticky, moderately plastic; common very fine to medium roots; common very fine and fine and few medium tubular pores; 90 percent continuous distinct clay films on faces of peds; 20 percent gravel, 20 percent cobbles, and 30 percent stones; moderately acid, pH 6.1 by pH meter 1:1 water; clear smooth boundary.
Cr—42 inches (107 cm); moderately cemented mudflow breccia bedrock.

Type location: Butte County, California; about 850 feet north-northwest of Doe Mill Point, approximately 1,850 feet north and 300 feet east of the southwest corner of sec. 32, T. 23 N., R. 3 E.; 39 degrees, 48 minutes, 15 seconds north latitude and 121 degrees, 40 minutes, 29 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to lithic or paralithic bedrock is 20 to 60 inches (51 to 152 cm). The mean annual soil temperature is 55 to 59 degrees F (13 to 15 degrees C). The soil moisture control section is dry in all parts from about June to October (about 150 days). The particle-size control section averages 27 to 40 percent clay and 5 to 80 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 5 to 25 percent gravel, 0 to 20 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 5YR 5/4, 6/3, or 6/4 or 7.5YR 4/3 or 5/4. Moist color is 5YR 4/3 or 4/4 or 7.5YR 3/2, 3/4, or 4/3. Texture is loam, gravelly loam, or very gravelly loam. The content of clay ranges from 20 to 26 percent. The horizon has 2 to

35 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones. By sum of cations, base saturation ranges from 40 to 65 percent. Reaction is slightly acid or neutral.

The upper part of the Bt horizon has dry color of 5YR 4/4, 5/4, or 6/6 or 7.5YR 5/4. Moist color is 2.5YR 5/4 or 5/6, 5YR 4/3 or 4/4, or 7.5YR 3/4 or 4/3. Texture is loam, gravelly loam, cobbly loam, clay loam, gravelly clay loam, very gravelly clay loam, cobbly clay loam, very cobbly clay loam, or very stony clay loam. The content of clay ranges from 25 to 35 percent. The content of gravel is 2 to 25 percent, the content of cobbles is 0 to 20 percent, and the content of stones is 0 to 20 percent. By sum of cations, base saturation ranges from 40 to 60 percent. Reaction is slightly acid or neutral.

The lower part of the Bt horizon has dry color of 2.5YR 3/4, 4/6, or 6/6 or 5YR 5/4 or 4/6. Moist color is 2.5YR 3/4, 4/4, or 5/6 or 5YR 4/3, 4/4, or 4/6. Texture is clay loam, gravelly clay loam, cobbly clay loam, very stony clay loam, extremely stony clay loam, clay, gravelly clay, very gravelly clay, extremely gravelly clay, very cobbly clay, or extremely stony clay. The content of clay ranges from 35 to 50 percent. The content of gravel is 5 to 25 percent, the content of cobbles is 0 to 30 percent, and the content of stones is 0 to 60 percent. By sum of cations, base saturation ranges from 35 to 50 percent. Reaction ranges from strongly acid to slightly acid.

Ultic Haploxeralfs, Sandstone

Ultic Haploxeralfs, sandstone, consist of deep or very deep, well drained soils that formed in residuum and colluvium derived from marine sandstone. These soils are on canyon side slopes on Cascade foothills. Slopes range from 3 to 100 percent. The mean annual precipitation is about 48 inches (1,219 mm), and the mean annual air temperature is about 57 degrees F (14 degrees C).

Taxonomic class: Thermic Ultic Haploxeralfs

Typical Pedon

Ultic Haploxeralfs, sandstone, very fine sandy loam, on a west-facing slope of 45 percent, under a cover of canyon live oak, blue oak, foothill pine, California laurel, Pacific poison oak, whiteleaf manzanita, and hedgehog dogtail, at an elevation of 980 feet (299 m). When described on 9/24/1998, the soil was dry throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 0.5 inch (0 to 1 cm); slightly decomposed plant material; abrupt smooth boundary.

A—0.5 inch to 2 inches (1 to 5 cm); light brown (7.5YR 6/3) very fine sandy loam, brown (7.5YR 4/3) moist; 14 percent clay; strong fine to coarse granular structure; slightly hard, friable, slightly sticky, nonplastic; many very fine and fine roots; many very fine to medium tubular and irregular pores; 1 percent andesite gravel and 4 percent sandstone gravel; slightly acid, pH 6.6 by Hellige-Truog; gradual wavy boundary.

Bt1—2 to 6 inches (5 to 15 cm); light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/3) moist; 16 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, nonplastic; common very fine and fine roots; many very fine to medium tubular pores; 30 percent discontinuous faint clay films; 1 percent andesite gravel and 2 percent sandstone gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt2—6 to 11 inches (15 to 28 cm); light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/4) moist; 18 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine to medium tubular pores; 70 percent discontinuous

distinct clay films; 1 percent sandstone gravel and 1 percent andesite gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt3—11 to 17 inches (28 to 43 cm); light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/4) moist; 20 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine to medium tubular pores; 90 percent discontinuous distinct clay films; 1 percent andesite gravel and 4 percent sandstone gravel; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

Bt4—17 to 24 inches (43 to 61 cm); light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 5/4) moist; 18 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine to medium tubular pores; 60 percent discontinuous faint clay films; 2 percent andesite gravel and 8 percent sandstone gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

2Bt5—24 to 32 inches (61 to 81 cm); light brown (7.5YR 6/4) very gravelly very fine sandy loam, brown (7.5YR 4/4) moist; 18 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common very fine to medium roots; many very fine to medium tubular pores; 60 percent discontinuous faint clay films; 50 percent sandstone gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

2Cr/2Bt—32 to 53 inches (81 to 135 cm); 10 percent brown (7.5YR 5/4) and 90 percent yellow (10YR 7/6) extremely gravelly sandy clay loam, 10 percent brown (7.5YR 4/4) and 90 percent yellowish brown (10YR 5/6) moist; 22 percent clay; moderate fine subangular blocky structure and massive; slightly hard, friable, slightly sticky, slightly plastic; few very fine to medium roots; many very fine to medium tubular pores; 80 percent discontinuous distinct clay films; 30 percent sandstone cobbles and 60 percent sandstone gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt wavy boundary.

2Cr1—53 to 65 inches (135 to 165 cm); pale yellow (2.5Y 7/4), weakly cemented sandstone bedrock, light olive brown (2.5Y 5/4) moist; few very fine to medium roots; few fine irregular pores; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

2Cr2—65 inches (165 cm); pale yellow (2.5Y 7/4), weakly cemented sandstone bedrock, light olive brown (2.5Y 5/4) moist; few very fine roots; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 2 miles southwest of Forest Ranch, approximately 1,700 feet south and 1,600 feet east of the northwest corner of sec. 13, T. 23 N., R. 2 E.; 39 degrees, 51 minutes, 12 seconds north latitude and 121 degrees, 42 minutes, 28 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to paralithic bedrock is 40 to more than 80 inches (102 to 203 cm). The mean annual soil temperature is 59 to 62 degrees F (15 to 17 degrees C). The soil moisture control section is dry in all parts from about June to November (about 150 days). The particle-size control section averages 12 to 30 percent clay and 5 to 30 percent rock fragments, mostly gravel. Rock fragments on the surface range from 0 to 20 percent gravel, 0 to 20 percent cobbles, 0 to 20 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 10YR 6/2, 6/3, or 6/4 or 7.5YR 6/3, 7/4, or 8/4. Moist color is 10YR 4/2, 4/3, 4/4, or 5/4 or 7.5YR 4/3, 4/4, or 5/4. Texture is very fine sandy loam, fine sandy loam, sandy clay loam, or gravelly sandy loam. The content of clay

ranges from 10 to 26 percent. The content of gravel is 3 to 20 percent. Reaction ranges from moderately acid to neutral.

The Bt and 2Bt horizons have dry color of 10YR 5/3, 5/4, 6/2, 6/4, or 7/4 or 7.5YR 5/4 or 6/4. Moist color is 10YR 4/2, 4/3, 5/3, 5/4, or 5/6 or 7.5YR 4/3, 4/4, or 5/4. Texture is very fine sandy loam, very gravelly very fine sandy loam, fine sandy loam, gravelly fine sandy loam, cobbly fine sandy loam, gravelly sandy loam, very gravelly sandy loam, cobbly sandy loam, sandy clay loam, or gravelly sandy clay loam. The content of clay ranges from 10 to 30 percent. The horizons have 1 to 30 percent gravel and 0 to 25 percent cobbles. Reaction ranges from moderately acid to neutral.

Ultic Haploxeralfs, Sandstone, Low Elevation

Ultic Haploxeralfs, sandstone, low elevation, consist of very deep or deep, well drained soils that formed in colluvium and residuum derived from Cretaceous marine sandstone and Eocene sandstone. These soils are on ridgetops and side slopes on Cascade foothills. Slopes range from 2 to 30 percent. The mean annual precipitation is about 31 inches (787 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Ultic Haploxeralfs, sandstone, low elevation, sandy loam, on an east-facing slope of 5 percent, under a cover of annual grasses, forbs, and scattered blue oaks, at an elevation of 475 feet (145 m). When described on 5/8/2001, the soil was dry to a depth of 8 inches (20 cm) and moist below that depth. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); light brown (7.5YR 6/3) sandy loam, brown (10YR 4/3) moist; 16 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; many very fine and fine roots; many fine irregular and tubular pores; 5 percent well rounded mixed gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt wavy boundary.

Bt1—2 to 8 inches (5 to 20 cm); light brown (7.5YR 6/3) sandy clay loam, brown (10YR 4/3) moist; 20 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, slightly sticky, nonplastic; many fine and medium roots between peds and common very fine roots throughout; many medium tubular pores; 15 percent discontinuous distinct clay films on surfaces along root channels; 5 percent well rounded mixed gravel; slightly acid, pH 6.2 by Hellige-Truog; clear wavy boundary.

Bt2—8 to 18 inches (20 to 46 cm); light brown (7.5YR 6/3) sandy clay loam, brown (10YR 4/3) moist; 22 percent clay; moderate coarse subangular blocky structure; hard, firm, slightly sticky, slightly plastic; many fine and medium roots between peds and few very fine roots throughout; many medium tubular pores; 50 percent discontinuous faint clay films on faces of peds; 10 percent well rounded mixed gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

Bt3—18 to 28 inches (46 to 71 cm); light brown (7.5YR 6/4) sandy clay loam, brown (7.5YR 4/4) moist; 25 percent clay; moderate coarse subangular blocky structure; hard, firm, slightly sticky, slightly plastic; few very fine and fine roots throughout and common medium and coarse roots between peds; many medium tubular pores; 50 percent discontinuous distinct clay films on faces of peds; 10 percent well rounded mixed gravel; moderately acid, pH 5.8 by Hellige-Truog; clear wavy boundary.

Bt4—28 to 39 inches (71 to 99 cm); light brown (7.5YR 6/4) sandy clay loam, brown (7.5YR 4/4) moist; 28 percent clay; moderate coarse and very coarse subangular

blocky structure; hard, firm, moderately sticky, moderately plastic; few fine roots throughout and common medium and coarse roots between peds; common fine and medium and tubular pores; 65 percent discontinuous distinct clay films on faces of peds; 10 percent well rounded mixed gravel; moderately acid, pH 5.8 by Hellige-Truog; clear wavy boundary.

BCt—39 to 49 inches (99 to 124 cm); light brown (7.5YR 6/4) sandy clay loam, strong brown (7.5YR 4/6) moist; 26 percent clay; moderate coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine roots throughout and common medium and coarse roots between peds; common very fine and fine irregular and tubular pores; 55 percent discontinuous distinct clay films on faces of peds; 10 percent well rounded mixed gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

C1—49 to 56 inches (124 to 142 cm); reddish yellow (7.5YR 6/6) sandy clay loam, brown (7.5YR 5/6) moist; 22 percent clay; massive; hard, firm, slightly sticky, slightly plastic; few fine to coarse roots in cracks; few very fine irregular pores; 5 percent well rounded mixed gravel; slightly acid, pH 6.2 by Hellige-Truog; abrupt smooth boundary.

C2—56 to 70 inches (142 to 178 cm); brownish yellow (10YR 6/6) sandy loam, yellowish brown (10YR 5/6) moist; 14 percent clay; massive; hard, firm, nonsticky, nonplastic; few fine and medium roots in cracks; few very fine irregular pores; slightly acid, pH 6.5 by Hellige-Truog.

Type location: Butte County, California; about 0.5 mile west of Pentz, approximately 1,100 feet east and 100 feet south of the northwest corner of sec. 25, T. 21 N., R. 3 E.; 39 degrees, 39 minutes, 14 seconds north latitude and 121 degrees, 35 minutes, 38 seconds west longitude; NAD27; USGS Quad: Cherokee, California.

Range in Characteristics

The depth to bedrock is 40 to more than 80 inches (102 to 203 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from about June to November (about 150 days). The particle-size control section averages 20 to 30 percent clay and 0 to 10 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 0 to 5 percent gravel.

The A horizon has dry color of 10YR 6/2 or 6/3 or 7.5YR 6/3. Moist color is 10YR 4/2 or 4/3. Texture is sandy loam, fine sandy loam, or very fine sandy loam. The content of clay ranges from 14 to 20 percent. The content of gravel is 0 to 10 percent. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 6/3 or 6/4. Moist color is 10YR 4/3 or 4/4 or 7.5YR 4/4. Texture is sandy clay loam, gravelly sandy clay loam, sandy clay loam, or clay loam. The content of clay ranges from 20 to 40 percent. The content of gravel is 0 to 20 percent. Reaction is moderately acid or slightly acid.

The BCt horizon has dry color of 7.5YR 6/4 or 10YR 6/4. Moist color is 7.5YR 4/6 or 10YR 5/4. Texture is sandy clay loam, clay loam, loam, fine sandy loam, or very fine sandy loam. The content of clay ranges from 10 to 35 percent. The content of gravel is 0 to 15 percent. Reaction is moderately acid or slightly acid.

The C horizon has dry color of 7.5YR 6/6 or 10YR 6/6. Moist color is 7.5YR 5/4 or 10YR 5/6. Texture is sandy loam or sandy clay loam. The content of clay ranges from 12 to 22 percent. The content of gravel is 0 to 5 percent. Reaction is moderately acid or slightly acid.

Ultic Haploxeralfs, Thermic

Ultic Haploxeralfs, thermic, consist of moderately deep, moderately well drained soils that formed in residuum derived from volcanic rocks. These soils are on ridgetops on Cascade foothills. Slopes range from 3 to 15 percent. The mean annual precipitation is about 30 inches (762 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Ultic Haploxeralfs

Typical Pedon

Ultic Haploxeralfs, thermic, gravelly loam, on a southwest-facing slope of 4 percent, under a cover of yellow starthistle and hedgehog dogtail with scattered blue oak, buckbrush, foothill pine, and manzanita, at an elevation of 1,250 feet (381 m). When described on 11/19/1998, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); reddish brown (5YR 5/4) gravelly loam, reddish brown (5YR 4/3) moist; 26 percent clay; weak medium subangular blocky structure parting to moderate fine and medium granular; moderately hard, friable, slightly sticky, slightly plastic; few fine and many very fine roots; many very fine to medium tubular and irregular pores; 5 percent stones, 5 percent cobbles, and 10 percent gravel; slightly acid, pH 6.2 by pH meter 1:1 water; clear smooth boundary.

Bt1—2 to 6 inches (5 to 15 cm); reddish brown (5YR 5/4) very cobbly clay loam, reddish brown (5YR 4/3) moist; 30 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; few fine and medium and common very fine roots; common very fine to medium tubular pores; 60 percent continuous distinct clay films on faces of peds; 5 percent stones, 10 percent gravel, and 20 percent cobbles; slightly acid, pH 6.1 by pH meter 1:1 water; abrupt smooth boundary.

Bt2—6 to 13 inches (15 to 33 cm); reddish brown (5YR 4/4) very cobbly clay loam, reddish brown (5YR 4/3) moist; 34 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine to medium and few coarse roots; many very fine and fine and common medium tubular pores; 80 percent continuous distinct clay films on faces of peds; 10 percent stones, 15 percent gravel, and 30 percent cobbles; moderately acid, pH 6.0 by pH meter 1:1 water; abrupt smooth boundary.

Bt3—13 to 21 inches (33 to 53 cm); yellowish red (5YR 4/6) very cobbly clay loam, reddish brown (5YR 4/4) moist; 33 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and fine roots; many very fine and fine and common medium tubular pores; 80 percent continuous distinct clay films on faces of peds; 15 percent stones, 20 percent gravel, and 25 percent cobbles; slightly acid, pH 6.1 by pH meter 1:1 water; abrupt smooth boundary.

Bt4—21 to 31 inches (53 to 79 cm); yellowish red (5YR 4/6) very cobbly clay loam, reddish brown (5YR 4/4) moist; 31 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, very sticky, moderately plastic; common very fine and fine roots; many very fine and fine and common medium tubular pores; 90 percent continuous distinct clay films on faces of peds; 10 percent stones, 20 percent gravel, and 25 percent cobbles; slightly acid, pH 6.4 by pH meter 1:1 water; abrupt wavy boundary.

R—31 inches (79 cm); strongly cemented volcanic conglomerate bedrock; platy iron-manganese concretions at the top of the horizon.

Type location: Butte County, California; about 1.05 miles north of the intersection of the upper end of Humboldt Road and Highway 32 and 200 feet west of Highway 32, approximately 2,400 feet east and 150 feet north of the center of sec. 10, T. 22 N., R. 2 E.; 39 degrees, 46 minutes, 39 seconds north latitude and 121 degrees, 43 minutes, 58 seconds west longitude; NAD83; USGS Quad: Paradise West, California.

Range in Characteristics

The depth to lithic or paralithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 59 to 67 degrees F (15 to 19 degrees C). The soil moisture control section is dry in all parts from about June to October (about 150 days). The particle-size control section averages 22 to 35 percent clay and 35 to 70 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. A fluctuating water table can occur between the top of the bedrock and 18 inches (46 cm) below the surface of the soil from December through March. Redoximorphic features occur as oxidized iron masses and iron-manganese masses in the A horizon and as a manganese capping on the R or Cr horizon. Rock fragments on the surface range from 5 to 20 percent gravel, 0 to 80 percent cobbles, 0 to 10 percent stones, and 0 to 10 percent boulders.

The A horizon has dry color of 5YR 5/4, 6/4, or 6/6 or 7.5YR 6/4. Moist color is 5YR 4/3 or 4/4 or 7.5YR 4/2 or 4/3. Texture is gravelly or cobbly loam. The content of clay ranges from 18 to 27 percent. The horizon has 10 to 25 percent gravel, 0 to 15 percent cobbles, and 0 to 5 percent stones. By sum of cations, base saturation ranges from 55 to 70 percent. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 5YR 4/4, 4/6, 5/4, or 5/6; 7.5YR 5/3, 5/4, or 6/4; or 10YR 5/4. Moist color is 5YR 4/3 or 4/4 or 7.5YR 4/3 or 4/4. Texture is gravelly loam, very gravelly loam, extremely gravelly loam, cobbly loam, very cobbly loam, very cobbly clay loam, or extremely cobbly clay loam. The content of clay ranges from 20 to 39 percent. The horizon has 10 to 40 percent gravel, 0 to 40 percent cobbles, and 0 to 15 percent stones. By sum of cations, base saturation ranges from 50 to 80 percent. Reaction ranges from moderately acid to neutral.

Ultic Haploxeralfs, Thermic, High Terrace

Ultic Haploxeralfs, thermic, high terrace, consist of very deep, moderately well drained soils that formed in alluvium derived from igneous and metamorphic rocks. These soils are on old, highly dissected, high terraces. Slopes range from 2 to 30 percent. The mean annual precipitation is about 29 inches (737 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Thermic Ultic Haploxeralfs

Typical Pedon

Ultic Haploxeralfs, thermic, high terrace, loam, on a slope of 30 percent, under a cover of blue oak, foothill pine, annual grasses, and forbs, at an elevation of 660 feet (201 m). When described on 4/27/2002, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; 17 percent clay; moderate very fine and fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; 2 percent subrounded quartz gravel and 8 percent subrounded metavolcanic gravel; 10 percent fine irregular yellowish red (5YR 5/8 moist) oxidized iron masses throughout; slightly acid, pH 6.3 by Hellige-Truog; abrupt smooth boundary.

BAt—2 to 6 inches (5 to 15 cm); yellowish brown (10YR 5/4) gravelly loam, dark yellowish brown (10YR 3/4) moist; 20 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine and common medium tubular pores; 5 percent subrounded quartz gravel and 25 percent subrounded metavolcanic gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.

Bt1—6 to 12 inches (15 to 30 cm); yellowish brown (10YR 5/4) very gravelly loam, dark yellowish brown (10YR 3/4) moist; 23 percent clay; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine and fine tubular pores; 5 percent subrounded quartz gravel, 35 percent subrounded metavolcanic gravel, and 10 percent subrounded metavolcanic cobbles; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.

Bt2—12 to 20 inches (30 to 51 cm); light yellowish brown (10YR 6/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; 26 percent clay; strong medium subangular blocky structure; moderately hard, firm, moderately sticky, moderately plastic; many very fine roots; many very fine and fine tubular pores; 5 percent subrounded quartz gravel, 10 percent subrounded metavolcanic cobbles, and 25 percent subrounded metavolcanic gravel; strongly acid, pH 5.5 by Hellige-Truog; clear smooth boundary.

Bt3—20 to 32 inches (51 to 81 cm); light yellowish brown (10YR 6/4) extremely gravelly clay loam, yellowish brown (10YR 5/4) moist; 29 percent clay; strong medium subangular blocky structure; moderately hard, firm, moderately sticky, moderately plastic; few medium and many very fine roots; many very fine and fine tubular pores; 5 percent subrounded quartz gravel, 10 percent subrounded metavolcanic cobbles, and 60 percent subrounded metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog; abrupt smooth boundary.

Bq1—32 to 39 inches (81 to 99 cm); very pale brown (10YR 7/4) extremely gravelly loam, light yellowish brown (10YR 6/4) moist; 26 percent clay; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; accumulation of secondary silica; many very fine roots; many very fine and fine tubular pores; 1 percent fine irregular yellowish red (5YR 5/8 moist) oxidized iron masses around rock fragments; 5 percent subrounded quartz gravel, 10 percent subrounded metavolcanic cobbles, and 50 percent subrounded metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog; clear smooth boundary.

Bq2—39 to 50 inches (99 to 127 cm); light yellowish brown (10YR 6/4) extremely gravelly sandy clay loam, yellowish brown (10YR 5/4) moist; 23 percent clay; moderate very fine and fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; accumulation of secondary silica; common very fine and fine and few medium roots around rock fragments; common very fine and fine tubular pores; 10 percent fine irregular yellowish red (5YR 5/8 moist) oxidized iron masses around rock fragments; 5 percent subrounded quartz gravel, 15 percent subrounded metavolcanic cobbles, and 60 percent subrounded metavolcanic gravel; slightly acid, pH 6.3 by Hellige-Truog.

Type location: Butte County, California; about 2.35 miles northwest of Bangor, approximately 1,350 feet south and 2,100 feet west of the northeast corner of sec. 20, T. 18 N., R. 5 E.; 39 degrees, 24 minutes, 21.58 seconds north latitude and 121 degrees, 25 minutes, 59.60 seconds west longitude; NAD83; USGS Quad: Bangor, California.

Range in Characteristics

Depth to the Bq horizon is 20 to 60 inches (51 to 152 cm) or more. The thickness of the solum is more than 60 inches (152 cm). The mean annual soil temperature is

59 to 65 degrees F (15 to 18 degrees C). The soil moisture control section is dry in all parts from about June through October (about 150 days). The particle-size control section averages 25 to 37 percent clay and 5 to 65 percent rock fragments, mostly gravel. Mineralogy is mixed. Redoximorphic features, such as oxidized iron masses and spherical manganese concretions, can occur in all horizons. A fluctuating water table can occur at a depth of 10 to 60 inches (25 to 152) from December through March. Some pedons have a BCt or C horizon.

The A horizon has dry color of 10YR 5/3, 5/4, or 6/4. Moist color is 10YR 3/3 or 3/4 or 7.5YR 3/3 or 4/3. Texture is loam, gravelly loam, or gravelly sandy loam. The content of clay ranges from 14 to 17 percent. The content of gravel is 10 to 30 percent. The content of organic matter is 1.0 to 3.5 percent. Reaction ranges from strongly acid to slightly acid.

The BAt horizon has dry color of 10YR 5/4, 5/6, or 6/3 or 7.5YR 5/4. Moist color is 10YR 3/4, 7.5YR 4/3 or 4/4, or 5YR 4/4. Texture is gravelly loam or very gravelly sandy loam. The content of clay ranges from 18 to 20 percent. The horizon has 15 to 45 percent gravel and 0 to 15 percent cobbles. The content of organic matter is 1.0 to 1.5 percent. Reaction is strongly acid or moderately acid.

The upper part of the Bt horizon has dry color of 10YR 5/3, 5/4, or 6/4 or 7.5YR 6/4. Moist color is 10YR 3/4 or 4/3, 7.5YR 4/4, or 5YR 4/4. Texture is loam, very gravelly loam, cobbly clay loam, very gravelly sandy clay loam, or gravelly sandy loam. The content of clay ranges from 20 to 30 percent. The content of gravel is 15 to 50 percent, and the content of cobbles is 0 to 15 percent. The content of organic matter is 0.5 to 1.0 percent. Reaction is strongly acid or moderately acid.

The lower part of the Bt horizon has dry color of 10YR 6/4; 7.5YR 6/4, 6/6, or 7/4; or 5YR 5/6. Moist color is 10YR 4/3; 7.5YR 4/4, 5/4, or 5/6; or 5YR 4/4 or 4/6. Texture is very gravelly loam, gravelly clay loam, very gravelly clay loam, extremely gravelly clay loam, cobbly clay loam, gravelly sandy clay loam, or very gravelly sandy clay loam. The content of clay ranges from 26 to 37 percent. The content of gravel is 15 to 65 percent, and the content of cobbles is 0 to 10 percent. The content of organic matter is 0.2 to 0.5 percent. Reaction ranges from strongly acid to slightly acid.

The Bq horizon has dry color of 10YR 5/4, 6/4, or 7/4. Moist color is 10YR 4/3, 4/4, 5/4, or 6/4. Texture is extremely gravelly loam or extremely gravelly sandy clay loam. The content of clay ranges from 20 to 26 percent. The horizon has 50 to 85 percent gravel and 0 to 15 percent cobbles. The content of organic matter is 0.1 to 0.5 percent. Reaction is slightly acid or neutral.

Vermet Series

The Vermet series consists of very deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in channels on flood plains. Slopes range from 0 to 2 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 63 degrees F (17 degrees C).

Taxonomic class: Fine-silty, mixed, superactive, thermic Aquic Haploxerepts

Typical Pedon

Vermet silt loam, on a slope of less than 1 percent, under a cover of annual grasses and forbs, at an elevation of 103 feet (31 m). When described on 6/27/1997, the soil was dry to a depth of 16 inches (41 cm) and slightly moist from 16 to 72 inches (41 to 183 cm). (Colors are for dry soil unless otherwise noted.)

A1—0 to 2 inches (0 to 5 cm); light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; 18 percent clay; strong very thin platy structure parting to moderate fine subangular blocky; slightly hard, very friable, nonsticky, slightly

plastic; common very fine roots; few fine irregular and few very fine tubular pores; 2 percent very fine irregular strong brown (7.5YR 4/6) oxidized iron masses; 1 percent well rounded gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

A2—2 to 8 inches (5 to 20 cm); light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; 20 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; common very fine roots; few very fine tubular pores; 5 percent very fine irregular strong brown (7.5YR 4/6) oxidized iron masses; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

A3—8 to 13 inches (20 to 33 cm); pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; 22 percent clay; moderate fine subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; few very fine roots; common very fine and fine tubular pores; 5 percent very fine irregular strong brown (7.5YR 4/6) oxidized iron masses; neutral, pH 6.8 by Hellige-Truog; clear smooth boundary.

Bw1—13 to 16 inches (33 to 41 cm); pale brown (10YR 6/3) silty clay loam, grayish brown (10YR 5/2) moist; 29 percent clay; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; few very fine roots; common very fine tubular pores; 5 percent discontinuous faint silt coatings; 10 percent very fine irregular brown (7.5YR 4/4) oxidized iron masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bw2—16 to 26 inches (41 to 66 cm); pale brown (10YR 6/3) silty clay loam, brown (10YR 4/3) moist; 30 percent clay; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; few very fine roots; common very fine tubular pores; 5 percent discontinuous faint silt coatings; 10 percent very fine irregular brown (7.5YR 4/4) oxidized iron masses; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bw3—26 to 41 inches (66 to 104 cm); pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; 32 percent clay; moderate medium subangular blocky structure; hard, friable, slightly sticky, moderately plastic; common very fine tubular pores; 5 percent discontinuous faint silt coatings; 10 percent very fine irregular brown (7.5YR 4/4) oxidized iron masses and 10 percent very fine threadlike gray (10YR 6/1) iron depletions lining pores; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bw4—41 to 62 inches (104 to 157 cm); light yellowish brown (10YR 6/4) silty clay loam, brown (10YR 5/3) moist; 32 percent clay; moderate medium subangular blocky structure; hard, firm, slightly sticky, moderately plastic; few very fine tubular pores; 5 percent discontinuous faint silt coatings; 10 percent very fine irregular brown (7.5YR 4/4) oxidized iron masses and 10 percent very fine threadlike gray (10YR 6/1) iron depletions lining pores; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Bw5—62 to 72 inches (157 to 183 cm); very pale brown (10YR 7/4) silty clay loam, yellowish brown (10YR 5/4) moist; 33 percent clay; moderate medium subangular blocky structure; hard, firm, slightly sticky, moderately plastic; few very fine tubular pores; 5 percent discontinuous faint silt coatings; 5 percent very fine irregular brown (7.5YR 4/4) oxidized iron masses, 5 percent very fine threadlike gray (10YR 6/1) iron depletions lining pores, and 5 percent very fine irregular black (N 2/0) manganese masses; 1 percent well rounded gravel; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

Type location: Butte County, California; about 0.76 mile north of the Rancho Llano Seco headquarters, approximately 200 feet east of entrance road and 2 miles west of the Mt. Diablo meridian; in an unsectionized area in the Llano Seco Land Grant; 39 degrees, 37 minutes, 10 seconds north latitude and 121 degrees, 57 minutes, 10 seconds west longitude; NAD27; USGS Quad: Llano Seco, California.

Range in Characteristics

The soils are more than 60 inches (152 cm) deep. The mean annual soil temperature is 60 to 64 degrees F (16 to 18 degrees C). The particle-size control section averages 27 to 35 percent clay and more than 50 percent silt. Mineralogy is mixed. By ammonium acetate, base saturation ranges from 90 to 100 percent throughout the profile. A fluctuating water table can occur within a depth of 40 inches (102 cm) from December through April and usually is below a depth of 40 inches (102 cm) from May through November. Redoximorphic features range from 2 to 20 percent oxidized iron masses with color of 7.5YR 4/4 or 4/6 from a depth of 0 to 80 inches (0 to 203 cm) or more, 5 to 15 percent soft manganese masses with color of N 2/0 from a depth of 20 to 80 inches (51 to 203 cm) or more, and 5 to 20 percent iron depletions with color of 10YR 6/1, 5Y 4/1, or 5BG 5/1 beginning at a depth of 20 to 30 inches (51 to 76 cm) and extending to a depth of 80 inches (203 cm) or more. Rock fragments on the surface range from 0 to 20 percent gravel. Some pedons may have calcium carbonates in the lower part and/or a gravelly substratum below a depth of 40 inches (102 cm) and/or have a C horizon.

The A horizon has dry color of 10YR 6/2 or 6/3. Moist color is 10YR 4/2, 4/3, 5/2, or 5/3. Texture is silt loam or gravelly silt loam. The content of clay ranges from 18 to 25 percent. The content of gravel is 0 to 20 percent. The content of organic matter is 1 to 5 percent. Reaction ranges from slightly acid to slightly alkaline.

The Bw horizon has dry color of 10YR 6/3, 6/4, or 7/4 or 2.5Y 5/2, 6/2, 7/4, or 8/3. Moist color is 10YR 4/3, 5/2, or 5/3; 2.5Y 5/3 or 5/4; or 7.5YR 5/3. Texture is silty clay loam or clay loam. The content of clay ranges from 29 to 35 percent in the upper part of the horizon and from 30 to 40 percent in the lower part. The content of organic matter is 0.2 to 2 percent. Reaction ranges from neutral to moderately alkaline.

The C horizon, where it occurs, has dry color of 10YR 7/3 or 8/3 or 2.5Y 7/3. Moist color is 10YR 4/3, 5/3, or 5/4 or 2.5Y 5/3. Texture is sandy loam, very fine sandy loam, or silt loam. The content of clay ranges from 13 to 20 percent. Reaction is slightly alkaline or moderately alkaline.

Vina Series

The Vina series consists of very deep, well drained soils that formed in alluvium derived from mixed rock sources. These soils are on alluvial fans. Slopes are 0 to 1 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 62 degrees F (17 degrees C).

Taxonomic class: Coarse-loamy, mixed, superactive, thermic Pachic Haploxerolls

Typical Pedon

Vina fine sandy loam, on a slope of 0.5 percent, under a cover of almond trees, at an elevation of 148 feet (45 m). When described on 5/25/1994, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

Ap1—0 to 3 inches (0 to 8 cm); grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; 13 percent clay; strong thick platy structure parting to strong thin and medium platy; soft, friable, nonsticky, slightly plastic; common very fine and fine roots; common very fine and fine and few medium tubular pores; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt smooth boundary.

Ap2—3 to 11 inches (8 to 28 cm); brown (10YR 5/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; 15 percent clay; moderate fine and medium subangular blocky structure; soft, friable, nonsticky, slightly plastic; few fine and

medium roots; common fine and medium tubular pores; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

A1—11 to 23 inches (28 to 58 cm); brown (10YR 5/3) sandy loam, very dark grayish brown (10YR 3/2) moist; 13 percent clay; weak fine and medium subangular blocky structure; soft, very friable, nonsticky, slightly plastic; common fine and medium, few coarse, and few very fine roots; common fine and medium and few very fine tubular pores; 2 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; clear wavy boundary.

A2—23 to 37 inches (58 to 94 cm); brown (10YR 5/3) sandy loam, brown (7.5YR 4/2) moist; 11 percent clay; weak and moderate fine and medium subangular blocky structure; soft, very friable, nonsticky, slightly plastic; few fine to coarse roots; many fine and medium and few very fine tubular pores; 4 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

C1—37 to 50 inches (94 to 127 cm); brown (10YR 5/3) sandy loam, brown (7.5YR 4/2) moist; 7 percent clay; massive; soft, very friable, nonsticky, nonplastic; few fine and medium roots; common fine and few medium tubular pores; 4 percent gravel; slightly alkaline, pH 7.5 by Hellige-Truog; clear wavy boundary.

C2—50 to 54 inches (127 to 137 cm); brown (10YR 5/3) loamy coarse sand, dark brown (7.5YR 3/2) moist; 5 percent clay; single grain; soft, very friable, nonsticky, nonplastic; many fine irregular pores; neutral, pH 7.0 by Hellige-Truog; abrupt wavy boundary.

C3—54 to 80 inches (137 to 203 cm); light brownish gray (10YR 6/2) coarse sand, very dark grayish brown (10YR 3/2) moist; 3 percent clay; single grain; loose, nonsticky, nonplastic; many fine irregular pores; 2 percent gravel; neutral, pH 7.0 by Hellige-Truog.

Type location: Butte County, California; about 2 miles west of Chico, approximately 3,250 feet east of Meridian Avenue and 1,650 feet south of Sacramento Avenue; in an unsectionized area in the Arroyo Chico Land Grant; 39 degrees, 43 minutes, 32 seconds north latitude and 121 degrees, 54 minutes, 24 seconds west longitude; NAD27; USGS Quad: Ord Ferry, California.

Range in Characteristics

The depth of the soils is more than 80 inches (203 cm). The mean annual soil temperature is 60 to 62 degrees F (16 to 17 degrees C). The particle-size control section averages 12 to 18 percent clay and 50 to 65 percent sand. Mineralogy is mixed. The content of organic matter is 1 to 2.5 percent to a depth of 23 inches (56 cm). By ammonium acetate, base saturation is 100 percent to a depth of 23 inches (56 cm).

The Ap horizon has dry color of 10YR 4/3, 5/2, or 5/3. Moist color is 10YR 3/1, 3/2, or 3/3 or 7.5YR 3/2. Texture is fine sandy loam or loam. The content of clay ranges from 12 to 20 percent. The content of gravel is 0 to 5 percent. Reaction ranges from slightly acid to moderately alkaline.

The A horizon has dry color of 10YR 4/2, 4/3, 5/2, or 5/3. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/2. Texture is fine sandy loam, sandy loam, or loam. The content of clay ranges from 5 to 18 percent. The content of gravel is 0 to 5 percent. Reaction ranges from slightly acid to moderately alkaline.

The Bw horizon, where it occurs, has dry color of 10YR 5/3, 6/2, or 6/3. Moist color is 10YR 4/2 or 4/3 or 7.5YR 4/2 or 4/3. Texture is loam, fine sandy loam, or sandy loam. The content of clay ranges from 5 to 18 percent. The content of gravel is 0 to 5 percent. Reaction ranges from neutral to moderately alkaline.

The C horizon has dry color of 10YR 4/3, 5/2, 5/3, or 6/2. Moist color is 10YR 3/2, 3/3, or 4/2 or 7.5YR 3/2, 3/3, or 4/2. Texture is fine sandy loam, loam, sandy loam, loamy sand, loamy coarse sand, or coarse sand. The content of clay ranges from 1 to

15 percent. The content of gravel is 0 to 5 percent. Reaction ranges from neutral to moderately alkaline.

Vistarobles Series

The Vistarobles series consists of shallow, somewhat poorly drained soils that formed in alluvium derived from igneous and metamorphic rocks. These soils are in swales on intermediate terraces. Slopes range from 0 to 9 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Clayey, mixed, active, thermic, shallow Abruptic Durixeralfs

Typical Pedon

Vistarobles sandy loam, on a south-facing slope of less than 1 percent, under a cover of navarretia, coyote thistle, and blow wives, at an elevation of 100 feet (30 m). When described on 5/13/1992, the soil was moist below a depth of 6 inches (15 cm). (Colors are for dry soil unless otherwise noted.)

A1—0 to 5 inches (0 to 13 cm); strong brown (7.5YR 5/6) sandy loam, dark brown (7.5YR 3/4) moist; 17 percent clay; weak thick platy structure parting to moderate medium subangular blocky; hard, friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine irregular and tubular pores; 5 percent fine distinct light brownish gray (10YR 6/2) oxidized iron masses and 2 percent fine distinct black (N 2/0) manganese masses; 5 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

A2—5 to 10 inches (13 to 25 cm); strong brown (7.5YR 5/6) sandy clay loam, brown (7.5YR 4/4) moist; 20 percent clay; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; many very fine irregular and tubular pores; 10 percent fine distinct strong brown (7.5YR 5/8) oxidized iron masses and 2 percent fine distinct black (N 2/0) manganese masses; 10 percent gravel; neutral, pH 6.8 by Hellige-Truog; abrupt smooth boundary.

2Bt—10 to 14 inches (25 to 36 cm); strong brown (7.5YR 5/6) gravelly clay, dark brown (7.5YR 3/4) moist; 40 percent clay; moderate medium angular blocky structure; very hard, friable, moderately sticky, moderately plastic; many very fine irregular and tubular pores; 2 percent fine distinct black (N 2/0) manganese masses; 50 percent discontinuous prominent clay films on faces of peds; 25 percent gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

3Bqm—14 to 34 inches (36 to 86 cm); reddish yellow (7.5YR 6/6), indurated duripan, strong brown (7.5YR 4/6) moist; cemented by silica; cementation decreasing with increasing depth; 25 percent gravel and 5 percent cobbles; 15 percent manganese surface coatings on top of the duripan; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

3C—34 to 40 inches (86 to 102 cm); dark yellowish brown (10YR 4/6) very cobbly sandy loam, dark yellowish brown (10YR 4/4) moist; 14 percent clay; single grain; loose, nonsticky, nonplastic; many very fine irregular pores; 15 percent gravel and 20 percent cobbles; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 3.2 miles northwest of Honcut, approximately 1,800 feet east and 300 feet south of the northwest corner of sec. 6, T. 17 N., R. 4 E.; 39 degrees, 21 minutes, 50 seconds north latitude and 121 degrees, 34 minutes, 9 seconds west longitude; NAD27; USGS Quad: Honcut, California.

Range in Characteristics

Depth to the duripan is 10 to 20 inches (25 to 51 cm). The mean annual soil temperature is 61 to 65 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about May 15 to October 31 (about 150 days). The particle-size control section averages 36 to 50 percent clay and 3 to 25 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur from the top of the duripan to 16 inches (41 cm) below the surface of the soil from November through April. Rock fragments on the surface range from 0 to 15 percent gravel and 0 to 5 percent cobbles. Some pedons have a BA, Bt, or 2BCt horizon and/or have iron depletions in the 2Bt horizon.

The A horizon has dry color of 7.5YR 5/4, 5/6, 5/8, or 6/4 or 10YR 4/4, 5/2, or 5/4. Moist color is 7.5YR 3/2, 3/4, or 4/4; 5YR 3/4; or 10YR 3/4. Texture is loam, gravelly loam, sandy loam, gravelly sandy loam, or sandy clay loam. The content of clay ranges from 16 to 26 percent. The horizon has 5 to 20 percent gravel and 0 to 10 percent cobbles. The content of organic matter is 1 to 2 percent. By sum of cations, base saturation ranges from 65 to 75 percent. Redoximorphic features, such as oxidized iron-manganese masses with dry color of 7.5YR 5/6 or 5/8 or 10YR 5/4, 5/8, 6/2, or 7/3 and manganese masses with dry color of N 2/0, occur in this horizon. Reaction ranges from strongly acid to neutral.

The 2Bt horizon has dry color of 7.5YR 5/4, 5/6, or 6/6. Moist color is 7.5YR 3/4, 4/4, or 4/6 or 5YR 4/6. Texture is clay or gravelly clay. The content of clay ranges from 40 to 50 percent. The content of gravel is 0 to 25 percent. The content of organic matter is 0.4 to 1.0 percent. By sum of cations, base saturation ranges from 75 to 85 percent. Redoximorphic features, such as soft oxidized iron masses with dry color of 7.5YR 4/4 and manganese masses with dry color of N 2.5/0, occur in this horizon. Reaction is slightly acid or neutral.

The 3Bqm horizon has dry color of 7.5YR 5/8 or 6/6. Moist color is 7.5YR 4/6 or 5/6. The horizon has 20 to 60 percent gravel and 1 to 15 percent cobbles. Reaction ranges from neutral to moderately alkaline.

The 3C horizon has dry color of 10YR 4/6 or 6/4. Moist color is 10YR 4/4 or 5/4 or 7.5YR 4/6 or 5/6. Texture is very cobbly loamy sand, very gravelly loamy sand, very gravelly loamy coarse sand, very cobbly sandy loam, very gravelly sandy loam, very cobbly coarse sandy loam, or very gravelly coarse sandy loam. The content of clay ranges from 3 to 15 percent. The horizon has 15 to 60 percent gravel and 0 to 25 percent cobbles. Reaction ranges from neutral to moderately alkaline.

Wafap Series

The Wafap series consists of deep, somewhat poorly drained soils that formed in alluvium derived from volcanic rocks. These soils are on bars on low stream terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 26 inches (660 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Clayey-skeletal, mixed, superactive, thermic Oxyaquic Argixerolls

Typical Pedon

Wafap gravelly loam, on a west-facing slope of 1 percent, under a cover of filaree and soft chess, at an elevation of 312 feet (95 m). When described on 4/2/1997, the soil was dry to a depth of 1 inch (3 cm), very slightly moist from 1 to 5 inches (3 to 13 cm), and slightly moist from 5 to 46 inches (13 to 117 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 1 inch (0 to 3 cm); brown (7.5YR 5/3) gravelly loam, dark reddish brown (5YR 3/3) moist; 22 percent clay; moderate medium platy structure parting to strong fine and medium subangular blocky; very hard, firm, slightly sticky, slightly plastic; many very fine roots; common very fine vesicular and tubular pores; 10 percent cobbles and 20 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; clear smooth boundary.

Bt1—1 to 5 inches (3 to 13 cm); brown (7.5YR 4/3) cobbly clay loam, dark reddish brown (5YR 3/2) moist; 28 percent clay; moderate coarse columnar structure parting to strong medium subangular blocky; extremely hard, firm, slightly sticky, moderately plastic; common very fine roots around rock fragments; common very fine vesicular and tubular pores; 70 percent continuous distinct clay films on faces of peds; 15 percent cobbles and 15 percent gravel; neutral, pH 6.7 by Hellige-Truog; gradual smooth boundary.

Bt2—5 to 13 inches (13 to 33 cm); brown (7.5YR 4/3) very cobbly clay loam, dark reddish brown (5YR 3/2) moist; 36 percent clay; moderate medium subangular blocky structure; very hard, friable, moderately sticky, moderately plastic; common very fine roots; common fine and very fine vesicular and tubular pores; 80 percent continuous distinct clay films on faces of peds; 5 percent stones, 10 percent gravel, and 25 percent cobbles; neutral, pH 7.0 by Hellige-Truog; clear wavy boundary.

Bt3—13 to 32 inches (33 to 81 cm); brown (7.5YR 4/4) extremely cobbly clay loam, reddish brown (5YR 4/3) moist; 39 percent clay; moderate fine and medium subangular blocky structure; very hard, friable, very sticky, very plastic; common very fine roots; common very fine vesicular and tubular pores; 90 percent continuous distinct clay films on faces of peds and rock fragments; 5 percent stones, 25 percent gravel, and 50 percent cobbles; slightly alkaline, pH 7.5 by Hellige-Truog; clear wavy boundary.

Bt4—32 to 39 inches (81 to 99 cm); brown (7.5YR 5/4) extremely cobbly clay loam, brown (7.5YR 4/4) moist; 38 percent clay; moderate fine and medium subangular blocky structure; moderately hard, friable, very sticky, very plastic; few very fine roots; common very fine vesicular and tubular pores; 90 percent continuous distinct clay films on faces of peds and rock fragments; 5 percent stones, 30 percent gravel, and 50 percent cobbles; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

Btq—39 to 46 inches (99 to 117 cm); light yellowish brown (10YR 6/4) extremely gravelly sandy clay loam, brown (7.5YR 5/4) moist; 30 percent clay; moderate fine subangular blocky structure; slightly hard, firm, weakly cemented by silica, moderately sticky, moderately plastic; common very fine vesicular and tubular pores; 90 percent continuous distinct clay films on faces of peds and rock fragments; 5 percent stones, 35 percent cobbles, and 40 percent gravel; moderately alkaline, pH 8.0 by Hellige-Truog; abrupt wavy boundary.

2Bqm—46 inches (117 cm); indurated duripan; cemented by silica.

Type location: Butte County, California; about 1.5 miles north of Rock Creek Road and 2.4 miles east of Meridian Road, approximately 2,050 feet north and 2,150 feet east of the southwest corner of sec. 9, T. 23 N., R. 1 E.; 39 degrees, 51 minutes, 40 seconds north latitude and 121 degrees, 52 minutes, 22 seconds west longitude; NAD27; USGS Quad: Richardson Springs, California.

Range in Characteristics

Depth to the duripan is 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 68 degrees F (17 to 20 degrees C). The particle-size control section averages 35 to 40 percent clay and 35 to 60 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table can occur between the top of the duripan and 13 inches below the surface of the soil from December through April. Redoximorphic features occur as oxidized iron masses in the A horizon and in the

upper part of the Bt horizon and as iron-manganese masses in the lower part of the Bt horizon and in the Btq horizon. Rock fragments on the surface range from 0 to 5 percent gravel, 0 to 5 percent cobbles, and 0 to 2 percent stones. Some pedons do not have a Btq horizon. Some have a 2Bt horizon.

The A horizon has dry color of 7.5YR 4/3 or 5/3 or 5YR 5/2. Moist color is 7.5YR 3/2 or 3/3 or 5YR 3/2 or 3/3. Texture is loam, gravelly loam, or very gravelly sandy clay loam. The content of clay ranges from 16 to 26 percent. The horizon has 10 to 45 percent gravel and 0 to 10 percent cobbles. Reaction is slightly acid or neutral.

The upper part of the Bt horizon has dry color of 7.5YR 4/3, 5/3, or 6/3 or 5YR 5/3. Moist color is 7.5YR 3/3 or 4/2 or 5YR 3/2 or 3/3. Texture is loam, gravelly loam, cobbly loam, gravelly clay loam, cobbly clay loam, or very gravelly sandy clay loam. The content of clay ranges from 22 to 35 percent. The content of gravel is 10 to 30 percent, and the content of cobbles is 0 to 15 percent. Reaction is slightly acid or neutral.

The lower part of the Bt horizon has dry color of 7.5YR 4/3, 4/4, 5/3, 5/4, 6/3, or 6/4 or 5YR 5/3. Moist color is 7.5YR 3/2, 4/2, 4/3, or 4/4 or 5YR 3/2, 3/3, or 4/3. Texture is gravelly clay loam, very gravelly clay loam, very cobbly clay loam, extremely cobbly clay loam, very gravelly sandy clay loam, extremely gravelly sandy clay loam, very gravelly sandy clay, or very gravelly clay. The content of clay ranges from 30 to 45 percent. The content of gravel is 10 to 70 percent, the content of cobbles is 5 to 60 percent, and the content of stones is 0 to 5 percent. Reaction ranges from neutral to moderately alkaline.

The Btq horizon has dry color of 7.5YR 5/4 or 10YR 6/4. Moist color is 7.5YR 4/3 or 5/4 or 5YR 3/4. Texture is extremely gravelly sandy clay loam, extremely gravelly sandy clay, extremely cobbly sandy clay loam, or extremely cobbly sandy clay. The content of clay ranges from 20 to 40 percent. The horizon has 35 to 70 percent gravel, 30 to 60 percent cobbles, and 0 to 5 percent stones. Reaction ranges from neutral to moderately alkaline.

Walkermine Series

The Walkermine series consists of very shallow or shallow, well drained soils that formed in colluvium and residuum derived from metavolcanic and metasedimentary rocks. These soils are on ridgetops and side slopes on metamorphic Sierra Nevada mountains. Slopes range from 3 to 110 percent. The mean annual precipitation is about 72 inches (1,829 mm), and the mean annual air temperature is about 50 degrees F (10 degrees C).

Taxonomic class: Loamy-skeletal, mixed, active, mesic Lithic Dystroxerepts

Typical Pedon

Walkermine very gravelly loam, on a west-facing slope of 68 percent, under a cover of canyon live oak, California black oak, and bigleaf maple with some white fir, sugar pine, Douglas-fir, ponderosa pine, and incense cedar, at an elevation of 4,500 feet (1,372 m). When described on 10/15/1999, the soil was slightly moist throughout. (Colors are for dry soil unless otherwise noted.)

Oi—0 to 1 inch (0 to 3 cm); slightly decomposed plant material; abrupt smooth boundary.

A—1 to 3 inches (3 to 8 cm); light yellowish brown (10YR 6/4) very gravelly loam, brown (7.5YR 4/2) moist; 22 percent clay; moderate fine granular structure; slightly hard, friable, nonsticky, slightly plastic; common very fine and fine roots; many very fine and fine and common medium vesicular and tubular pores; 15 percent cobbles and 45 percent gravel; slightly acid, pH 6.5 by Hellige-Truog; NaF pH 9.0; clear smooth boundary.

Bt—3 to 12 inches (8 to 30 cm); light brown (7.5YR 6/4) very gravelly loam, brown (7.5YR 4/4) moist; 23 percent clay; moderate fine and medium subangular blocky structure parting to moderate fine granular; moderately hard, friable, nonsticky, slightly plastic; common fine and medium roots; many very fine and fine and common medium vesicular and tubular pores; 90 percent continuous faint clay bridges between sand grains; 20 percent cobbles and 40 percent gravel; moderately acid, pH 6.0 by Hellige-Truog; NaF pH 9.2; abrupt smooth boundary.
R—12 inches (30 cm); indurated metavolcanic bedrock.

Type location: Butte County, California; about 2.85 miles east of Lomo, approximately 1,320 feet north and 900 feet west of the southeast corner of sec. 7, T. 25 N., R. 4 E.; 40 degrees, 2 minutes, 6 seconds north latitude and 121 degrees, 33 minutes, 51 seconds west longitude; NAD83; USGS Quad: Butte Meadows, California.

Range in Characteristics

The depth to lithic bedrock is 4 to 20 inches (10 to 51 cm). The mean annual soil temperature is 47 to 57 degrees F (8 to 14 degrees C). The particle-size control section averages 15 to 27 percent clay and 35 to 80 percent rock fragments, mostly gravel. Mineralogy is mixed. Rock fragments on the surface range from 15 to 75 percent gravel, 0 to 30 percent cobbles, 0 to 30 percent stones, and 0 to 30 percent boulders.

The A horizon has dry color of 10YR 6/2, 6/3, 6/4, or 7/3 or 7.5YR 5/4, 6/3, or 6/4. Moist color is 7.5YR 3/3, 4/2, 4/3, 4/4, or 4/6 or 10YR 4/2 or 4/3. Texture is gravelly loam, very gravelly loam, gravelly sandy loam, very gravelly sandy loam, extremely gravelly sandy loam, or very gravelly fine sandy loam. The content of clay ranges from 12 to 26 percent. The horizon has 20 to 60 percent gravel, 0 to 20 percent cobbles, 0 to 20 percent stones, and 0 to 20 percent boulders. Reaction is slightly acid or neutral.

The Bt horizon has dry color of 7.5YR 5/4, 6/4, 6/6, or 7/4 or 10YR 7/2, 7/3, or 7/4. Moist color is 7.5YR 4/3, 4/4, 4/6, 5/4, or 5/6 or 10YR 4/2, 4/3, 4/4, or 5/4. Texture is very gravelly loam, extremely gravelly loam, very gravelly sandy loam, extremely gravelly sandy loam, extremely cobbly sandy loam, or very gravelly sandy clay loam. The content of clay ranges from 12 to 26 percent. The horizon has 25 to 70 percent gravel, 0 to 40 percent cobbles, 0 to 20 percent stones, and 0 to 20 percent boulders. Reaction ranges from moderately acid to neutral.

Whitecabin Series

The Whitecabin series consists of deep, poorly drained soils that formed in alluvium derived from mixed rock sources. These soils are in flood basins. Slopes are 0 to 1 percent. The mean annual precipitation is about 18 inches (457 mm), and the mean annual air temperature is about 60 degrees F (16 degrees C).

Taxonomic class: Fine, smectitic, thermic Aquic Haploxererts

Typical Pedon

Whitecabin silty clay, on a slope of 1 percent, under a cover of annual grasses, at an elevation of 101 feet (31 m). When described on 5/10/1995, the soil was slightly moist to a depth of 24 inches (61 cm) and moist from 24 to 53 inches (61 to 135 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 5 inches (0 to 13 cm); light brownish gray (10YR 6/2) silty clay, dark grayish brown (10YR 4/2) moist; 43 percent clay; moderate medium angular blocky structure parting to strong fine granular; extremely hard, firm, slightly sticky, very

plastic; common fine, few very fine, and few medium roots; few very fine tubular pores; common fine irregular brown (7.5YR 4/4) oxidized iron masses; noneffervescent; moderately acid, pH 5.9 by pH meter 1:1 water; abrupt smooth boundary.

Bss1—5 to 13 inches (13 to 33 cm); light brownish gray (10YR 6/2) silty clay, dark grayish brown (10YR 4/2) moist; 48 percent clay; moderate coarse prismatic structure parting to moderate fine angular blocky; extremely hard, firm, moderately sticky, very plastic; few very fine roots; common very fine tubular pores; few slickensides; noneffervescent; neutral, pH 7.0 by pH meter 1:1 water; gradual smooth boundary.

Bss2—13 to 26 inches (33 to 66 cm); brown (10YR 5/3) silty clay, dark grayish brown (10YR 4/2) moist; 49 percent clay; moderate coarse prismatic structure parting to moderate fine angular blocky; extremely hard, firm, moderately sticky, very plastic; few very fine roots; common very fine and few fine tubular pores; common slickensides; few fine and medium irregular worm nodules; noneffervescent; moderately alkaline pH 8.0 by pH meter 1:1 water; gradual smooth boundary.

Bss3—26 to 35 inches (66 to 89 cm); brown (10YR 5/3) silty clay, brown (10YR 4/3) moist; 50 percent clay; moderate medium prismatic structure parting to moderate fine angular blocky; extremely hard, firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; few slickensides; common fine dark gray (10YR 4/1) iron depletions and few fine spherical manganese masses; noneffervescent; strongly alkaline, pH 8.6 by pH meter 1:1 water; clear smooth boundary.

Bkss—35 to 45 inches (89 to 114 cm); yellowish brown (10YR 5/4) silty clay, dark yellowish brown (10YR 4/4) moist; 49 percent clay; moderate medium angular blocky structure; extremely hard, firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; few slickensides; common fine spherical black (N 2/0) manganese masses; common fine and medium carbonate threads; noneffervescent; strongly alkaline, pH 8.5 by pH meter 1:1 water; clear wavy boundary.

Bk—45 to 53 inches (114 to 135 cm); brown (7.5YR 5/4) silty clay, brown (7.5YR 4/4) moist; 46 percent clay; moderate fine subangular blocky structure parting to moderate fine granular; extremely hard, firm, moderately sticky, very plastic; few very fine roots; few very fine tubular pores; common fine and medium carbonate threads; common fine spherical black (N 2/0) manganese masses; noneffervescent; strongly alkaline, pH 8.5 by pH meter 1:1 water; abrupt wavy boundary.

2Bkqm1—53 to 63 inches (135 to 160 cm); indurated duripan; very pale brown (10YR 7/4) silt loam, yellowish brown (10YR 5/4) moist; 9 percent clay; massive; common very fine and fine tubular pores; few prominent continuous yellowish red (5YR 4/6) clay films in root channels and/or pores; common fine irregular black (N 2/0) manganese masses; common carbonate threads; noneffervescent; strongly alkaline, pH 9.0 by pH meter 1:1 water; silica- and lime-cemented, indurated capping 0.125 inch thick; roots matted on top of the capping; carbonate pendants on the underside of duripan plates; gradual smooth boundary.

2Bkqm2—63 to 72 inches (160 to 183 cm); moderately cemented duripan; very pale brown (10YR 7/4) silt loam, yellowish brown (10YR 5/4) moist; 14 percent clay; massive; moderately cemented; common very fine tubular pores; few prominent continuous yellowish red (5YR 4/6) clay films in root channels and/or pores; common fine carbonate threads and common fine irregular carbonate threads; noneffervescent; strongly alkaline, pH 8.9 by pH meter 1:1 water; 2 percent rounded gravel.

Type location: Butte County, California; about 1.7 miles southeast of Rancho Llano Seco headquarters, approximately 8,500 feet west of the Mt. Diablo meridian and

14,500 feet south of the boundary between T. 20 N. and 21 N.; in an unsectionized area in the Llano Seco Land Grant; 39 degrees, 34 minutes, 57 seconds north latitude and 121 degrees, 56 minutes, 48 seconds west longitude; NAD27; USGS Quad: Llano Seco, California.

Range in Characteristics

Depth to the duripan generally ranges from 40 to 60 inches (102 to 152 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry from about June to October 15 (120 to 125 days). The particle-size control section averages 45 to 55 percent clay. Mineralogy is dominantly smectitic. The depth to carbonates ranges from 6 to 39 inches (15 to 99 cm). The content of organic matter is 1 to 2 percent from a depth of 0 to 5 inches (0 to 13 cm) and 0.1 to 0.9 percent from 5 to 72 inches (13 to 183 cm). By ammonium acetate, base saturation ranges from 96 to 100 percent throughout the profile. Reversible, surface-initiated cracks 0.5 inch to 3 inches (1.27 to 8 cm) or more wide extend to a depth of 25 to 39 inches (64 to 99 cm) or more. They are open from May 15 to October 15 (about 150 days) when the soils are not irrigated and are closed the rest of the year. Slickensides occur in the Bss and Bkss horizons, at a depth of 5 to 45 inches (13 to 114 cm). A fluctuating water table can occur from the top of the duripan to 26 inches (66 cm) below the surface of the soil from December through April.

Some pedons have overwash of silt loam that ranges from 4 to 15 inches (10 to 38 cm) in thickness and has 18 to 27 percent clay or overwash of silty clay loam that ranges from 4 to 20 inches (10 to 51 cm) in thickness and has 27 to 40 percent clay. Depth to the duripan ranges from 40 to 81 inches (102 to 206 cm), depending on the thickness of the overwash.

The A horizon has dry color of 10YR 4/1, 4/2, 5/2, or 6/3. Moist color is 10YR 3/1, 3/2, 3/3, or 4/2. Texture is silty clay or clay. The content of clay ranges from 40 to 55 percent. The content of exchangeable sodium is 0 to 1 percent. SAR is 0 to 1. Redoximorphic features, such as oxidized iron masses with color of 7.5YR 4/4 or 4/6 and manganese masses with color of N 2/0, may occur in this horizon. Reaction ranges from moderately acid to neutral.

The Bss horizon has dry color of 10YR 5/2, 5/3, 5/4, 6/2, or 6/4. Moist color is 10YR 3/2, 3/3, 3/4, 4/2, 4/3, or 4/4 or 7.5YR 5/4. Texture is clay or silty clay. The content of clay ranges from 45 to 55 percent. The content of exchangeable sodium is 3 to 10 percent. SAR is 1 to 6. Redoximorphic features, such as manganese masses with color of N 2/0 and iron depletions with color of 10YR 4/1, occur in this horizon. Reaction ranges from slightly acid to strongly alkaline.

The Bkss horizon has dry color of 10YR 5/4, 6/3, or 7/4 or 7.5YR 5/4. Moist color is 10YR 3/3, 4/3, or 4/4 or 7.5YR 4/4 or 4/6. Texture is clay, silty clay, or clay loam. The content of clay ranges from 35 to 55 percent. The content of exchangeable sodium is 10 to 12 percent. SAR is 1 to 9. The horizon is noneffervescent to strongly effervescent. Calcium carbonate occurs as soft masses or concretions. The content of calcium carbonate is 0 to 1 percent. Redoximorphic features, such as manganese masses with color of N 2/0, occur in this horizon. Reaction ranges from slightly alkaline to strongly alkaline.

The Bk or 2Bk horizon has dry color of 10YR 6/4 or 7.5YR 5/4. Moist color is 10YR 4/4 or 7.5YR 4/4. Texture is clay, silty clay, or clay loam. The content of clay ranges from 35 to 55 percent. The content of exchangeable sodium is 10 to 12 percent. SAR is 1 to 8. The horizon is noneffervescent to strongly effervescent. Calcium carbonate occurs as soft masses or concretions. The content of calcium carbonate is 0 to 1 percent. The horizon has redoximorphic features, such as manganese masses with color of N 2/0. Reaction is moderately alkaline or strongly alkaline.

Wickscorner Series

The Wickscorner series consists of very deep, moderately well drained soils that formed in alluvium derived from basalt. These soils are on alluvial fans on Table Mountain. Slopes range from 2 to 10 percent. The mean annual precipitation is about 28 inches (711 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-loamy, mixed, superactive, thermic Ultic Palexeralfs

Typical Pedon

Wickscorner loam, on a west-facing slope of 5 percent, under a cover of annual grasses, at an elevation of 418 feet (127 m). When described on 4/17/2001, the soil was dry from 0 to 8 inches (0 to 20 cm) and slightly moist from 8 to 84 inches (20 to 213 cm). (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); brown (7.5YR 4/3) loam, dark brown (7.5YR 3/3) moist; 20 percent clay; weak fine and medium subangular blocky structure parting to moderate fine granular; hard, firm, slightly sticky, slightly plastic; many very fine and fine and common medium roots; many very fine irregular pores; 10 percent rounded basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; clear smooth boundary.

Bt1—2 to 8 inches (5 to 20 cm); brown (7.5YR 4/3) loam, dark reddish brown (5YR 3/3) moist; 26 percent clay; moderate medium and coarse subangular blocky structure parting to moderate medium platy; very hard, very firm, slightly sticky, slightly plastic; many very fine and fine roots; few fine and medium tubular pores; 30 percent discontinuous distinct clay films on surfaces along pores; 2 percent rounded quartz gravel and 10 percent rounded basalt gravel; moderately acid, pH 5.8 by Hellige-Truog; gradual smooth boundary.

Bt2—8 to 22 inches (20 to 56 cm); brown (7.5YR 4/3) gravelly clay loam, dark reddish brown (5YR 3/3) moist; 30 percent clay; moderate medium and coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine and fine roots; common fine and medium tubular pores; 40 percent discontinuous distinct clay films on faces of peds; 32 percent rounded basalt gravel; moderately acid, pH 6.0 by Hellige-Truog; clear wavy boundary.

2Bt3—22 to 38 inches (56 to 97 cm); brown (7.5YR 4/3) very gravelly clay loam, dark reddish brown (5YR 3/3) moist; 36 percent clay; moderate fine and medium subangular blocky structure; hard, firm, very sticky, very plastic; common very fine and fine roots; common very fine and fine and few medium tubular pores; 50 percent continuous distinct clay films on faces of peds; 3 percent rounded quartz gravel and 35 percent rounded basalt gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt wavy boundary.

2Bt4—38 to 59 inches (97 to 150 cm); brown (7.5YR 5/4) very gravelly clay, dark reddish brown (5YR 3/3) moist; 42 percent clay; moderate coarse subangular blocky structure; hard, firm, very sticky, very plastic; few very fine and fine roots; few fine and medium tubular pores; 50 percent continuous distinct clay films on faces of peds; 5 percent rounded quartz gravel and 45 percent rounded basalt gravel; slightly acid, pH 6.3 by Hellige-Truog; abrupt wavy boundary.

3Bt5—59 to 72 inches (150 to 183 cm); brown (10YR 4/3) extremely gravelly sandy clay, dark brown (10YR 3/3) moist; 48 percent clay; moderate fine and medium subangular blocky structure; noncemented; very hard, firm, very sticky, very plastic; few very fine roots on top of the horizon; few fine tubular pores; 30 percent discontinuous distinct clay films on faces of peds; 30 percent fine and medium iron depletions and 20 percent very fine manganese masses; 3 percent rounded

quartz gravel and 60 percent rounded basalt gravel with soft, weathered rinds; slightly acid, pH 6.3 by Hellige-Truog; clear wavy boundary.

3Bt6—72 to 84 inches (183 to 213 cm); yellowish brown (10YR 5/4) extremely gravelly sandy clay, brown (10YR 4/3) moist; 40 percent clay; moderate fine and medium subangular blocky structure; noncemented; very hard, firm, very sticky, very plastic; few fine tubular pores; 35 percent discontinuous clay films on faces of peds; 10 percent very fine manganese masses and 30 percent fine and medium iron depletions; 3 percent rounded quartz gravel and 60 percent rounded basalt gravel with soft, weathered rinds; slightly acid, pH 6.3 by Hellige-Truog.

Type location: Butte County, California; about 7.4 miles northwest of Oroville, approximately 2,800 feet west and 1,100 feet north of the southeast corner of sec. 2, T. 20 N., R. 3 E.; 39 degrees, 36 minutes, 54 seconds north latitude and 121 degrees, 36 minutes, 25 seconds west longitude; NAD83; USGS Quad: Oroville, California.

Range in Characteristics

Depth to the duripan is 60 to 80 inches (152 to 203 cm) or more. The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The soil moisture control section is dry in all parts from June through October 15 (about 135 days). The particle-size control section averages 27 to 35 percent clay and 20 to 35 percent rock fragments, mostly gravel. Below the control section, the content of clay is 35 to 55 percent and the content of rock fragments is 35 to 80 percent. Mineralogy is mixed. By sum of cations, base saturation ranges from 50 to 75 percent to a depth of 72 inches (183 cm). A fluctuating water table can occur at a depth of 50 to 84 inches (127 to 213 cm) or more from December through April. Redoximorphic features, such as manganese masses with color of N 2/0, occur in the 2Bt and 3Bt horizons. Rock fragments on the surface range from 0 to 5 percent gravel and 0 to 5 percent cobbles.

The A horizon has dry color of 7.5YR 4/3 or 5/3 or 10YR 4/3. Moist color is 7.5YR 2/2, 3/2, 3/3, or 4/3 or 10YR 3/3. Texture is loam or fine sandy loam. The content of clay ranges from 15 to 20 percent. The horizon has 0 to 10 percent gravel, mostly basalt and chert in small amounts. The content of organic matter is 2 to 6 percent. Reaction is moderately acid or slightly acid.

The Bt horizon has dry color of 7.5YR 4/3, 5/3, or 5/4 or 10YR 5/3. Moist color is 5YR 3/3, 3/4, or 4/3; 7.5YR 3/3, 3/4, or 4/3; or 10YR 3/4. Texture is loam, clay loam, gravelly loam, gravelly clay loam, gravelly sandy clay loam, or very gravelly loam. The content of clay ranges from 20 to 33 percent. The horizon has 5 to 35 percent gravel and 0 to 5 percent cobbles. The content of organic matter is 0.5 to 2 percent. Reaction ranges from very strongly acid to moderately acid.

The 2Bt horizon has dry color of 7.5YR 5/3 or 5/4, 5YR 4/4 or 5/4, or 10YR 5/3. Moist color is 5YR 3/3, 3/4, 4/3, or 4/4 or 7.5YR 3/3, 3/4, or 4/3. Texture is very gravelly clay loam, very gravelly clay, very gravelly sandy clay, gravelly clay, extremely gravelly clay loam, or very gravelly sandy clay loam. The content of clay ranges from 28 to 45 percent. The horizon has 2 to 60 percent gravel and 0 to 10 percent cobbles. The content of organic matter is 0.5 to 1 percent. Reaction ranges from strongly acid to neutral.

The 3Bt horizon has dry color of 10YR 4/3 or 5/4, 7.5YR 5/3 or 5/4, or 5YR 4/3, 4/4, 5/4, or 5/6. Moist color is 10YR 3/3, 3/4, or 4/3; 7.5YR 3/4, 4/4, or 4/3; or 5YR 3/3, 3/4, 4/3, or 4/4. Texture is extremely gravelly sandy clay, extremely gravelly clay, extremely gravelly clay loam, very gravelly sandy clay, or very gravelly clay. The content of clay ranges from 35 to 55 percent. The horizon has 35 to 65 percent gravel, 0 to 45 percent cobbles, and 0 to 2 percent stones. The content of organic matter is 0.2 to 0.8 percent. Reaction ranges from strongly acid to neutral. The horizon is noncemented or extremely weakly cemented.

Wilsoncreek Series

The Wilsoncreek series consists of very deep, moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on bars on flood plains. Slopes range from 0 to 2 percent. The mean annual precipitation is about 22 inches (559 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Fine-silty, mixed, superactive, thermic Cumulic Haploxerolls

Typical Pedon

Wilsoncreek loam, on a west-facing slope of less than 1 percent, under a cover of annual grasses and valley oak, at an elevation of 85 feet (26 m). When described on 5/16/1992, the soil was dry to a depth of 7 inches (18 cm) and moist from 7 to 60 inches (18 to 152 cm). (Colors are for dry soil unless otherwise noted.)

Ap—0 to 7 inches (0 to 18 cm); yellowish brown (10YR 5/4) loam, very dark grayish brown (10YR 3/2) moist; 22 percent clay; strong fine subangular blocky structure parting to strong fine granular; loose, very friable, slightly sticky, slightly plastic; few fine and many very fine roots; common fine irregular pores; 5 percent fine distinct and prominent dark brown (7.5YR 3/4 moist) and strong brown (7.5YR 4/6 moist) oxidized iron masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

A1—7 to 14 inches (18 to 36 cm); yellowish brown (10YR 5/4) loam, dark brown (10YR 3/3) moist; 13 percent clay; moderate fine and medium prismatic structure parting to medium and coarse subangular blocky; slightly hard, very friable, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine tubular pores; 5 percent fine prominent strong brown (7.5YR 5/6 moist) and reddish brown (5YR 4/4 moist) oxidized iron masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

A2—14 to 25 inches (36 to 64 cm); yellowish brown (10YR 5/4) loam, dark brown (10YR 3/3) moist; 17 percent clay; moderate fine and medium prismatic structure parting to medium and coarse subangular blocky; slightly hard, very friable, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine tubular pores; 1 percent fine faint strong brown and 5 percent fine distinct strong brown (7.5YR 5/6 moist) and brown (7.5YR 4/4 moist) oxidized iron masses; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

A3—25 to 34 inches (64 to 86 cm); dark yellowish brown (10YR 4/4) loam, dark brown (7.5YR 3/3) and brown (7.5YR 4/3) moist; 20 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine and fine roots; few very fine tubular pores; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bw1—34 to 44 inches (86 to 112 cm); brown (7.5YR 4/4) loam, brown (7.5YR 4/3) and dark brown (7.5YR 3/3) moist; 20 percent clay; moderate medium and coarse prismatic structure parting to fine and medium subangular blocky; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bw2—44 to 60 inches (112 to 152 cm); brown (7.5YR 4/4) loam, dark brown (7.5YR 3/3) moist; 18 percent clay; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; 1 percent fine faint and distinct yellowish brown (10YR 5/4 moist) and dark yellowish brown (10YR 3/4 moist) oxidized iron masses; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 2.0 miles southwest of Honcut, approximately 2,800 feet south and 300 feet west of the northeast corner of sec. 19,

T. 17 N., R. 4 E.; 39 degrees, 18 minutes, 49 seconds north latitude and 121 degrees, 33 minutes, 28 seconds west longitude; NAD27; USGS Quad: Honcut, California.

Range in Characteristics

The thickness of the solum is more than 60 inches (152 cm). The mean annual soil temperature is 61 to 65 degrees F (16 to 18 degrees C). The soil moisture control section is dry in all parts from about May 15 to October 31 (about 165 days) The particle-size control section averages 18 to 27 percent clay. Mineralogy is mixed. A fluctuating water table can occur at a depth of 36 to 60 inches (91 to 152 cm) or more from December through April. Some pedons have a C horizon.

The Ap horizon has dry color of 10YR 4/2, 4/3, 5/3, or 5/4 or 7.5YR 3/3. Moist color is 10YR 3/2 or 3/3 or 7.5YR 3/3. Texture is loam or silt loam. The content of clay ranges from 13 to 18 percent. The content of organic matter is 2 to 3 percent. By sum of cations, base saturation ranges from 75 to 85 percent. Redoximorphic features, such as oxidized iron masses with moist color of 10YR 4/6 or 5/6 or 7.5YR 3/4, 4/4, or 4/6, occur in this horizon. Reaction is slightly acid or neutral.

The A horizon has dry color of 10YR 4/3, 4/4, 5/3, or 5/4. Moist color is 10YR 3/2 or 3/3. Texture is loam or silt loam. The content of clay ranges from 13 to 27 percent. The content of organic matter is 1 to 3 percent. By sum of cations, base saturation ranges from 80 to 90 percent. Redoximorphic features, such as oxidized iron masses with moist color of 10YR 4/2, 5/2, or 5/3 or 7.5YR 3/2, 4/3, or 4/4, occur in this horizon. Reaction ranges from slightly acid to slightly alkaline.

The Bw horizon has dry color of 10YR 4/3 or 4/4 or 7.5YR 4/4. Moist color is 10YR 4/3 or 4/4 or 7.5YR 3/3 or 3/4. Texture is loam or silt loam. The content of clay ranges from 15 to 27 percent. The content of organic matter is 0.5 to 1 percent. By sum of cations, base saturation ranges from 85 to 95 percent. Redoximorphic features, such as oxidized iron masses with moist color of 10YR 4/6 or 5/6 or 7.5YR 3/4, 4/4, or 4/6, occur in this horizon. Reaction is neutral or slightly alkaline.

Woodleaf Series

The Woodleaf series consists of moderately deep, well drained soils that formed in material weathered from ultramafic rocks with a large amount of serpentine minerals. These soils are on ridgetops and side slopes on ultramafic Sierra Nevada mountains. Slopes range from 3 to 30 percent. The mean annual precipitation is about 65 inches (1,651 mm), and the mean annual air temperature is about 54 degrees F (12 degrees C).

Taxonomic class: Clayey-skeletal, magnesic, mesic Ultic Haploxeralfs

Typical Pedon

Woodleaf gravelly loam, at an elevation of 3,200 feet (975 m). (Colors are for dry soil unless otherwise noted.)

Oi—0.5 inch to 0 (1 cm 0); partially decomposed twigs and needles.

A1—0 to 4 inches (0 to 10 cm); dark yellowish brown (10YR 4/4) gravelly loam, dark yellowish brown (10YR 3/4) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine to medium roots; many very fine and fine irregular and common very fine tubular pores; 20 percent gravel, 5 percent cobbles, and 1 percent stones; moderately acid; clear smooth boundary.

A2—4 to 9 inches (10 to 23 cm); strong brown (7.5YR 4/6) gravelly loam, dark reddish brown (5YR 3/4) moist; moderate fine granular structure; slightly hard, very friable, sticky, slightly plastic; common very fine to coarse roots; many very fine and fine irregular and common very fine and fine tubular pores; 25 percent

gravel, 5 percent cobbles, and 1 percent stones; moderately acid; clear wavy boundary.

2Bt1—9 to 17 inches (23 to 43 cm); yellowish red (5YR 4/6) very gravelly clay loam, dark reddish brown (5YR 3/3) moist; weak medium subangular blocky structure; hard, friable, sticky, plastic; many fine and medium and common very fine and coarse roots; many very fine to medium tubular pores; common thin clay films on faces of peds and in pores; 30 percent gravel, 15 percent cobbles, and 2 percent stones; moderately acid; clear wavy boundary.

2Bt2—17 to 28 inches (43 to 71 cm); brown (7.5YR 4/4) very gravelly clay, dark brown (7.5YR 3/4) moist; strong medium subangular blocky structure; very hard, firm, sticky, plastic; common medium and coarse roots; few very fine and fine tubular pores; many thick clay films on faces of peds; 30 percent gravel, 15 percent cobbles, and 2 percent stones; slightly acid; abrupt wavy boundary.

R—28 inches (71 cm); serpentine bedrock.

Type location: Yuba County, California; about 1 mile south of Woodleaf, approximately 3,000 feet south and 1,300 feet west of the northeast corner of sec. 16, T. 19 N., R. 7 E.; 39 degrees, 30 minutes, 15 seconds north latitude and 121 degrees, 11 minutes, 18 seconds west longitude; NAD27; USGS Quad: Clipper Mills, California.

Range in Characteristics

The depth to lithic bedrock is 20 to 40 inches (51 to 102 cm). The mean annual soil temperature is 47 to 54 degrees F (8 to 12 degrees C). The soil moisture control section is dry in all parts from about July 15 to September 15 (about 65 days). Mineralogy is magnesic. The content of organic matter is 2 to 3 percent to a depth of 9 inches (23 cm). Base saturation is 50 to 75 percent.

The A horizon has dry color of 10YR 5/4, 4/4, or 4/3 or 7.5YR 4/6. Moist color is 10YR 3/3 or 3/4, 7.5YR 3/4, or 5YR 3/4. Texture is gravelly loam. The content of clay ranges from 18 to 27 percent. The content of rock fragments ranges from 15 to 35 percent, including 10 to 30 percent gravel, 5 to 15 percent cobbles, and 0 to 3 percent stones. Reaction is moderately acid or slightly acid.

The 2Bt horizon has dry color of 10YR 6/4 or 6/6; 7.5YR 4/3, 4/4, or 4/6; or 5YR 4/6. Moist color is 10YR 4/4, 7.5YR 3/4, or 5YR 3/3 or 3/4. Texture is very gravelly clay loam or very gravelly clay. The content of clay ranges from 35 to 60 percent. The content of rock fragments ranges from 35 to 55 percent, including 25 to 40 percent gravel, 10 to 25 percent cobbles, and 0 to 3 percent stones. Reaction ranges from moderately acid to neutral. The ratio of calcium to magnesium is 1.5 or more. It generally increases with increasing depth.

Xerofluvents

Xerofluvents consist of very deep, somewhat poorly drained or moderately well drained soils that formed in alluvium derived from mixed rock sources. These soils are on bars and in channels on flood plains along tributaries of the Sacramento River. Slopes range from 0 to 4 percent. The mean annual precipitation is about 29 inches (737 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Typic Xerofluvents

Typical Pedon

Xerofluvents sandy loam, on a north-facing slope of 4 percent, under a cover of foothill pine, California sycamore, redbud, Pacific poison oak, ripgut brome, vetch, yellow starthistle, and mugwort, at an elevation of 300 feet (91 m). When described

on 4/13/1999, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 6 inches (0 to 15 cm); brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; 6 percent clay; single grain; loose, nonsticky, nonplastic; many very fine and fine and common medium roots; many very fine and fine interstitial and tubular pores; slightly acid, pH 6.5 by Hellige-Truog; gradual smooth boundary.

C1—6 to 14 inches (15 to 36 cm); brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; 4 percent clay; single grain; loose, nonsticky, nonplastic; many very fine to medium roots; many very fine interstitial pores; neutral, pH 7.2 by Hellige-Truog; gradual smooth boundary.

C2—14 to 26 inches (36 to 66 cm); pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; 2 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium roots; many very fine interstitial pores; neutral, pH 7.2 by Hellige-Truog; gradual smooth boundary.

C3—26 to 37 inches (66 to 94 cm); pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; 5 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium and few coarse roots; many very fine interstitial pores; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

Ab—37 to 43 inches (94 to 109 cm); brown (10YR 5/3) sandy loam, very dark grayish brown (10YR 3/2) moist; 10 percent clay; weak medium subangular blocky structure; loose, nonsticky, nonplastic; common very fine to coarse roots; many very fine interstitial pores; slightly alkaline, pH 7.5 by Hellige-Truog; clear smooth boundary.

C4—43 to 47 inches (109 to 119 cm); pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; 1 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium roots; many very fine interstitial pores; moderately alkaline, pH 8.0 by Hellige-Truog; clear smooth boundary.

C5—47 to 54 inches (119 to 137 cm); pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; 3 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium roots; many very fine interstitial pores; moderately alkaline, pH 8.0 by Hellige-Truog; gradual smooth boundary.

C6—54 to 72 inches (137 to 183 cm); pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; 2 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium roots; many very fine interstitial pores; moderately alkaline, pH 8.0 by Hellige-Truog; gradual smooth boundary.

C7—72 to 80 inches (183 to 203 cm); pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; 4 percent clay; single grain; loose, nonsticky, nonplastic; common very fine to medium roots; many very fine interstitial pores; moderately alkaline, pH 8.0 by Hellige-Truog.

Type location: Butte County, California; about 1.1 miles east of Horseshoe Lake, approximately 900 feet north and 2,450 feet east of the northwest corner of sec. 16, T. 22 N., R. 2 E.; in an unsectionized area in the Arroyo Chico Land Grant; 39 degrees, 46 minutes, 21 seconds north latitude and 121 degrees, 45 minutes, 35 seconds west longitude; NAD83; USGS Quad: Richardson Springs, California.

Range in Characteristics

The depth to bedrock is more than 60 inches (152 cm). The mean annual soil temperature is 48 to 64 degrees F (9 to 18 degrees C). The soil moisture control section is dry in all parts from about May to October (about 180 days). The particle-size control section averages 2 to 8 percent clay and 0 to 65 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. A fluctuating water table can occur at a depth of 28 to 80 inches (71 to 203 cm) throughout the year. Redoximorphic features, such as oxidized iron masses with color of 7.5YR 5/6, occur in the C

horizon. Rock fragments on the surface range from 0 to 75 percent gravel, 0 to 40 percent cobbles, and 0 to 5 percent stones.

The A horizon has dry color of 7.5YR 6/2 or 6/3 or 10YR 5/3. Moist color is 7.5YR 4/2 or 4/3 or 10YR 4/3. Texture is sandy loam, gravelly sandy loam, very gravelly sandy loam, extremely gravelly sandy loam, cobbly sandy loam, or very cobbly sandy loam. The content of clay ranges from 2 to 10 percent. The horizon has 0 to 70 percent gravel and 0 to 40 percent cobbles. Reaction is slightly acid or neutral.

The C horizon has dry color of 10YR 5/3 or 6/3 or 7.5YR 5/3, 6/2, or 6/3. Moist color is 10YR 4/2 or 4/3 or 7.5YR 4/2 or 4/3. Texture is sandy loam, loamy sand, sand, coarse sand, or the gravelly, very gravelly, extremely gravelly, or cobbly analogs of those textures. The content of clay ranges from 1 to 8 percent. The horizon has 0 to 80 percent gravel and 0 to 35 percent cobbles. Reaction ranges from neutral to moderately alkaline.

The Ab horizon has dry color of 10YR 5/3 or 6/3. Moist color is 10YR 4/2 or 3/2. Texture is fine sandy loam or sandy loam. The content of clay ranges from 4 to 12 percent. The horizon has 0 to 15 percent gravel and 0 to 15 percent cobbles. Reaction is neutral or slightly alkaline.

Xerorthents, Shallow

Xerorthents, shallow, consist of very shallow or shallow, moderately well drained soils that formed in colluvium, residuum, and alluvium derived from volcanic rocks. These soils are on side slopes in canyons on Cascade foothills. Slopes range from 15 to 50 percent. The mean annual precipitation is about 28 inches (711 cm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Thermic Xerorthents

Typical Pedon

Xerorthents, shallow, gravelly clay loam, on a south-southwest-facing slope of 28 percent, under a cover of yellow starthistle and wild oat, at an elevation of 460 feet (140 m). When described on 11/09/1998, the soil was moist throughout. (Colors are for dry soil unless otherwise noted.)

A—0 to 2 inches (0 to 5 cm); grayish brown (10YR 5/2) gravelly clay loam, dark grayish brown (10YR 4/2) moist; 31 percent clay; moderate medium subangular blocky structure parting to moderate fine granular; hard, friable, moderately sticky, moderately plastic; common fine and many very fine roots; many very fine to medium irregular and tubular pores; 20 percent gravel; neutral, pH 7.0 by Hellige-Truog; clear smooth boundary.

Bt1—2 to 5 inches (5 to 13 cm); grayish brown (10YR 5/2) gravelly clay loam, dark grayish brown (10YR 4/2) moist; 34 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine roots; common very fine and fine tubular pores; 40 percent discontinuous faint clay films; 20 percent gravel and 25 percent cobbles; neutral, pH 7.2 by Hellige-Truog; gradual smooth boundary.

Bt2—5 to 8 inches (13 to 20 cm); grayish brown (10YR 5/2) very cobbly clay loam, dark grayish brown (10YR 4/2) moist; 37 percent clay; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine roots; common very fine and fine tubular pores; 60 percent discontinuous faint clay films; 20 percent gravel and 25 percent cobbles; neutral, pH 7.2 by Hellige-Truog; abrupt smooth boundary.

2R—8 inches (20 cm); white (10YR 8/1), strongly cemented volcanic sandstone, grayish brown (10YR 5/2) moist; slightly alkaline, pH 7.5 by Hellige-Truog.

Type location: Butte County, California; about 0.25 mile northeast of Horseshoe Lake, approximately 6,900 feet north and 2,200 feet west of the southeast corner of sec. 17, T. 22 N., R. 2 E.; in an unsectionized area in the Arroyo Chico Land Grant; 39 degrees, 46 minutes, 28 seconds north latitude and 121 degrees, 46 minutes, 35 seconds west longitude; NAD83; USGS Quad: Richardson Springs, California.

Range in Characteristics

The depth to lithic or paralithic bedrock is 2 to 20 inches (5 to 51 cm). The mean annual soil temperature is 59 to 67 degrees F (15 to 19 degrees C). The soil moisture control section is dry in all parts from about May to October (about 120 days). The particle-size control section averages 22 to 39 percent clay and 5 to 60 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. Rock fragments on the surface range from 0 to 25 percent gravel, 0 to 20 percent cobbles, 0 to 40 percent stones, and 0 to 40 percent boulders.

The A horizon has dry color of 10YR 5/2, 6/2, 6/3, or 7/2 or 7.5YR 5/4, 6/3, or 6/4. Moist color is 10YR 3/2 or 4/2 or 7.5YR 3/2, 4/2, or 4/3. Texture is loam, gravelly loam, clay loam, gravelly clay loam, very stony clay loam, gravelly sandy clay loam, or sandy loam. The content of clay ranges from 18 to 35 percent. The horizon has 3 to 25 percent gravel, 0 to 10 percent cobbles, and 0 to 20 percent stones. Reaction is neutral or slightly alkaline.

The Bt horizon has dry color of 10YR 4/3, 5/2, 5/3, 6/2, 6/3, or 7/2; 7.5YR 5/3, 6/2, 6/3, or 6/4; or 5YR 5/4. Moist color is 10YR 4/2 or 4/3; 7.5YR 4/2, 4/3, or 4/4; or 5YR 4/2 or 4/3. Texture is gravelly loam, very gravelly loam, clay loam, gravelly clay loam, very gravelly clay loam, very cobbly clay loam, sandy clay loam, gravelly sandy clay loam, very gravelly sandy clay loam, or very gravelly clay. The content of clay ranges from 23 to 42 percent. The horizon has 1 to 40 percent gravel, 0 to 25 percent cobbles, and 0 to 10 percent stones. Reaction ranges from slightly acid to slightly alkaline.

Xerorthents, Tailings

Xerorthents, tailings, consist of very deep, moderately well drained to somewhat excessively drained, anthropogenic (altered) soils that formed in human-transported material deposited by dredges as tailing piles after most of the fine-earth material was washed and removed during gold-dredging operations. These soils are on flood plains and stream terraces. Slopes range from 0 to 50 percent. The mean annual precipitation is about 23 inches (584 mm), and the mean annual air temperature is about 61 degrees F (16 degrees C).

Taxonomic class: Thermic Xerorthents

Reference Pedon

Xerorthents, tailings, very gravelly sandy loam, on a slope of 3 percent, under a cover of cottonwood, valley oak, blackberry, and annual grasses, at an elevation of 110 feet (33 m). When described 6/28/2001, the soil was dry to a depth of 35 inches (89 cm) and slightly moist below that depth. (Colors are for dry soil unless otherwise noted.)

A—0 to 3 inches (0 to 8 cm); brown (10YR 5/3) very gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; 16 percent clay; weak very fine and fine granular structure; soft, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine irregular pores; 10 percent well rounded cobbles and 45 percent well rounded gravel; strongly acid, pH 5.5 by Hellige-Truog; abrupt smooth boundary.

AC—3 to 8 inches (8 to 20 cm); brown (10YR 5/3) extremely gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; 15 percent clay; moderate thick platy

structure; soft, very friable, slightly sticky, slightly plastic; many very fine roots; many very fine irregular pores; 5 percent well rounded cobbles and 60 percent well rounded gravel; slightly acid, pH 6.5 by Hellige-Truog; abrupt smooth boundary.

C1—8 to 21 inches (20 to 53 cm); brown (10YR 4/3) loamy sand, dark grayish brown (10YR 4/2) moist; 7 percent clay; moderate thick and medium platy structure; soft, very friable, nonsticky, nonplastic; many very fine roots; many very fine irregular pores; 10 percent well rounded gravel; neutral, pH 6.8 by Hellige-Truog; abrupt smooth boundary.

C2—21 to 26 inches (53 to 66 cm); brown (10YR 5/3) loamy sand, dark grayish brown (10YR 4/2) moist; 6 percent clay; moderate thick and medium platy structure; soft, very friable, nonsticky, nonplastic; many very fine roots; many very fine irregular pores; 5 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

C3—26 to 35 inches (66 to 89 cm); yellowish brown (10YR 5/4) loamy sand, brown (10YR 4/3) moist; 6 percent clay; moderate thick and medium platy structure; soft, very friable, nonsticky, nonplastic; few very fine roots; many very fine irregular pores; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

C4—35 to 48 inches (89 to 122 cm); brown (10YR 4/3) loamy coarse sand, dark grayish brown (10YR 4/2) moist; 5 percent clay; moderate thick and medium platy structure; soft, very friable, nonsticky, nonplastic; common very fine roots; many very fine irregular pores; neutral, pH 7.0 by Hellige-Truog; gradual smooth boundary.

C5—48 to 59 inches (122 to 150 cm); brown (10YR 4/3) loamy sand, dark grayish brown (10YR 4/2) moist; 6 percent clay; massive; soft, very friable, nonsticky, nonplastic; few very fine roots; many very fine irregular pores; 1 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog; abrupt smooth boundary.

C6—59 to 81 inches (150 to 206 cm); brown (10YR 4/3) loamy sand, dark grayish brown (10YR 4/2) moist; 6 percent clay; massive; soft, very friable, nonsticky, nonplastic; common very fine roots; many very fine irregular pores; 1 percent well rounded gravel; neutral, pH 7.0 by Hellige-Truog.

The reference pedon is an example of the soils within this category. It is not necessarily representative of the soils throughout the survey area. The texture, color, rock fragments, and thickness of layers vary considerably from one area to another.

Type location: Butte County, California; about 1.25 miles northwest of Oak Grove in the Oroville Wildlife Area, approximately 1,900 feet east and 1,500 feet south of the northwest corner of sec. 2, T. 18 N., R. 3 E.; 39 degrees, 26 minutes, 49 seconds north latitude and 121 degrees, 36 minutes, 26 seconds west longitude; NAD83; USGS Quad: Palermo, California.

Range in Characteristics

The depth of the soils is more than 80 inches (203 cm). The mean annual soil temperature is 62 to 64 degrees F (17 to 18 degrees C). The particle-size control section ranges from 3 to 7 percent clay, 70 to 90 percent sand, and 0 to 90 percent rock fragments, mostly gravel and cobbles. Mineralogy is mixed. A fluctuating water table can occur at a depth of 60 to more than 80 inches (152 to more than 203 cm) from December through July. Rock fragments on the surface range from 5 to 100 percent gravel, 10 to 100 percent cobbles, and 0 to 50 percent stones.

The A horizon has dry color of 10YR 4/2, 5/2, 5/3, or 6/3. Moist color is 10YR 3/2, 3/3, or 3/4. Texture is very gravelly sandy loam, very cobbly sandy loam, extremely cobbly sandy loam, or gravelly very fine sandy loam. The content of clay ranges from 10 to 16 percent. The horizon has 20 to 45 percent gravel and 10 to 60 percent cobbles. Reaction ranges from strongly acid to neutral.

The AC horizon has dry color of 10YR 5/3 or 6/3 or 7.5YR 5/3. Moist color is 10YR 3/4 or 7.5YR 3/4. Texture is extremely gravelly or extremely cobbly sandy loam. The content of clay ranges from 15 to 18 percent. The horizon has 30 to 60 percent gravel and 5 to 60 percent cobbles. Reaction is slightly acid or neutral.

The C horizon has dry color of 10YR 4/3, 5/3, 5/4, 6/3, or 6/4 or 7.5YR 4/3 or 5/3. Moist color is 10YR 4/2 or 4/3 or 7.5YR 3/4. Texture is loamy sand, loamy coarse sand, coarse sand, sand, cobbly loamy sand, very cobbly loamy sand, gravelly loamy sand, extremely gravelly loamy coarse sand, very gravelly loamy sand, or fine sandy loam. The content of clay ranges from 3 to 7 percent. The horizon has 0 to 90 percent gravel and 0 to 35 percent cobbles. Reaction is slightly acid or neutral.

Formation of the Soils

Soil is defined as a natural body comprised of solids (minerals and organic matter), liquid, and gases that occurs on the land surface, occupies space, and is characterized by one or both of the following: Horizons, or layers, that are distinguishable from the initial material as a result of additions, losses, transfers, and transformations of energy and matter and the ability to support rooted plants in a natural environment (Soil Survey Staff, 1999).

Soil also is defined as the unconsolidated mineral or organic material on the immediate surface of the earth that serves as a natural medium for the growth of land plants. This natural medium is subject to and shows the effects of the genetic and environmental factors of climate (including the effects of water and temperature) and of macro- and micro-organisms, as conditioned by relief. These factors act on the parent material over a period of time (Soil Science Society of America, 1997).

Soil genesis is defined as the mode of origin of the soil with special reference to the soil-forming processes or factors responsible for development of the solum, or true soil, from unconsolidated parent material (Soil Science Society of America, 1997).

Factors of Soil Formation

By Dean W. Burkett, Soil Survey Project Leader, Natural Resources Conservation Service.

The five major factors of soil formation are parent material, climate, time, topography, and living organisms. Soils vary across the landscape. The interaction among the five factors influences soil formation and determines the properties of an individual soil at any given place. Each factor influences and modifies the effects of the other four factors. The importance of individual factors differs from place to place, and the interactions are more complex for some soils than for others.

Parent material refers to the rock type, its mineralogical properties, and the mode of material deposition. Climate is essentially temperature and precipitation (amount and type). The influence of time on soil formation extends from the present to hundreds of thousands of years ago. Topography encompasses the steepness, aspect, and complexity of slopes, which play an important role in landscape stability and determine whether soils form in place or are transported by geologic erosion. Living organisms, both macro-organisms, such as animals, humans, birds, reptiles, earthworms, and insects, and micro-organisms, such as bacteria, fungi, nematodes, and protozoa, play an important role in soil formation. Their activities result in physical disturbance and the transformation of energy and matter.

Commonly, one factor dominates the soil-forming process. For example, material weathered from quartz diorite, which is uniform in composition, occurring over a large area will dominate the effects of climate, time, topography, and living organisms during the process of soil formation. No matter how variable the precipitation or slope gradient, the mineralogical properties of the parent material will determine soil properties.

In another example, climatic factors, such as high rainfall and warm temperatures, can dominate soil formation across a range of parent materials on complex slopes and

aspects with different plant communities. These factors form uniform soil properties despite the other soil-forming factors.

Parent Material

Parent material provides a physical foundation and is described according to the mode of deposition and the type and origin of rock or material that forms into soil. Parent material is grouped on the basis of the mode of deposition. The groups include residuum, which is material or bedrock that has weathered in place; alluvium, which has been transported and deposited by water; colluvium, which has been moved downslope by the force of gravity; eolian material, which has been transported and deposited by wind; and glacial drift, which has been transported by glaciers.

Parent materials may be grouped according to their point of origin. This survey area has three geomorphic provinces—the Great Valley, the Cascade Range, and the Sierra Nevada. These provinces are divided into 15 major geologic formations, which are subdivided into 32 geologic map units (Saucedo and Wagner, 1992). Rocks and sediments in the 32 geologic map units range in age from recent to approximately 415 million years old. Geologic map units help soil scientists to better understand relationships between the type and source of various parent materials.

In the Great Valley geomorphic province, the soils formed primarily in alluvium. This alluvium consists of both mixed rocks and sediments carried and deposited by creeks and rivers originating in the foothills and mountains of the Coast, Cascade, and Sierra Nevada Ranges.

In the Cascade Range, the soils formed in colluvium, eolian material, volcanic ash, and residuum weathered from rocks. The types of rocks include lava flows of extrusive igneous rocks, such as basalt and andesite; mixtures of volcanic ash and rocks that became cemented to form mudflow breccia; and tephra, a mixture of volcanic ash and rocks ejected during volcanic eruptions.

In the Sierra Nevada, the soils formed in colluvium, residuum, some alluvium, and some lava flows and tephra from volcanic materials. The rock types are quite variable, having originated from intrusive igneous rocks, such as quartz diorite, diorite, gabbro, or trondhjemite; both marine and nonmarine sedimentary rocks, such as sandstone, conglomerate, claystone, and glacial till; metamorphic rocks, including metasediments, metavolcanic rocks, metadiorite, green schist, and ultramafic rocks, such as serpentine; and extrusive igneous rocks, such as basalt, andesite, and pyroclastic mudflows.

At high elevations in both the Cascade and Sierra Nevada Ranges, the soils formed in glacial drift composed of quartz diorite, andesite, and basalt.

The pedogenic transformation of parent material into soil often begins as exposed rock is subject to various mechanical forces, such as heating and cooling, especially freezing and thawing, the growth of plant roots, precipitation, wind, and ice. These mechanical forces cause the disintegration of rocks, which are broken down into smaller and smaller sizes, eventually becoming sediment. With each decrease in particle size, surface area increases, allowing chemical transformations to break down the rocks concurrently with the mechanical forces.

The rate of physical and chemical breakdown varies by rock type because of differences in hardness, mineralogy, grain size, and porosity. Generally, soft bedrock, such as sandstone, weathers more quickly than hard bedrock, such as gabbro, under similar climatic conditions. Climatic factors also influence the rate of weathering. Generally, warm (not hot) temperatures along with high amounts of rainfall, which increase the activity of living organisms, weather rock and soil material much more quickly than cold temperatures and precipitation that falls mainly as snow.

The products of weathering may take many paths before becoming soil. They may be carried away by water and deposited many miles from their point of origin, or they may remain in place for thousands to millions of years.

Climate

Temperature and precipitation greatly influence weathering rates and the development of soil properties.

Temperature plays an important role in biologic activity and chemical transformations. Soil temperature influences organism growth and function, which drive the transformations and translocations of weathered products and overall development. During seasonal periods with either very warm or cold temperatures, soil-forming processes slow down. A soil temperature of 41 degrees F (5 degrees C) is considered biologic zero (the temperature of negligible growth and function for locally adapted plants). Growth and function cease at 32 degrees F (0 degrees C).

Soil temperature monitoring at a depth of 20 inches (50 centimeters) was completed during the survey to establish soil temperature regime boundaries. Three soil temperature regimes were observed within the survey area—thermic, mesic, and frigid. A thermic soil temperature regime has a mean annual soil temperature (MAST) between 59 and 71 degrees F (15 and 22 degrees C) and generally occurs at elevations between 55 and 2,000 feet (16 and 610 meters). A mesic soil temperature regime has a MAST between 47 and 59 degrees F (8 and 15 degrees C) and generally occurs at elevations between 2,000 and 4,800 feet (610 and 1,463 meters). Mesic conditions extend down to an elevation of 500 feet (152 meters) in canyons and on northeast-facing slopes. A frigid soil temperature regime has a MAST of less than 47 degrees F (8 degrees C) and generally occurs at elevations between 4,800 and 6,115 feet (1,463 and 1,864 meters). Frigid conditions extend down to an elevation of 3,320 feet (1,012 meters) in canyons and on northeast-facing slopes.

The quantity and form of precipitation influence soil formation physically through the translocation of clay and salts through the soil profile and biologically through organism function and the transformation of energy and matter. Rainfall infiltrates the soil surface and percolates downward through pores, cracks, and voids in the profile, commonly moving clay, nutrients (cations), and humic acids. In this survey area, the amount of precipitation generally ranges from 18 inches (457 millimeters) in the Sacramento Valley to more than 80 inches (2,032 millimeters) in the mountains (fig. 2). This variability occurs over a distance of only 50 miles (80 kilometers). It illustrates a strong “orographic effect” produced by the prevailing weather pattern across the survey area. With increasing elevation from west to east, the air becomes cooler as it rises up foothill and mountain slopes, resulting in increased precipitation.

Snowfall is common at an elevation of about 3,000 feet (914 meters) and occasionally occurs down to an elevation of about 1,000 feet (305 meters). At an elevation of about 4,000 feet (1,219 meters), snow becomes the dominant form of precipitation during the winter months.

Areas primarily receiving high amounts of rainfall tend to develop strongly expressed soil profiles with distinct horizons, if given enough time, compared to areas primarily receiving snow.

Two soil moisture regimes, xeric and aquic, occur in this survey area. The most prevalent one is the xeric moisture regime, which is characterized by cool, moist winters and warm, dry summers. In normal years, the soil moisture control section is dry for 45 or more consecutive days in the 4 months following the summer solstice and moist in all parts for 45 or more consecutive days following the winter solstice.

Soils with an aquic moisture regime are saturated by water for at least enough time to develop anaerobic or reducing conditions. As the soils become saturated, pore

space is displaced by water and dissolved oxygen is depleted. In the absence of oxygen, anaerobic micro-organisms first utilize manganese and then iron as an energy source and manganese and iron are reduced. Reduced manganese and iron are soluble and are carried downward through the soils by water. Water tables rise and move downward in response to the amount and timing of precipitation. When the water table moves downward, air reenters pores and manganese and iron become oxidized and precipitate in the form of concentrations. This seasonal flux is called oxidation-reduction. Redoximorphic features left in the soil are evidence of this process.

Time

Time is needed for the interaction of the other soil-forming factors to develop soils. The parent materials in this survey area range in age from recent to more than 400 million years old. Long periods of time are required for the development of soil horizons and the formation of soils from the parent material. Some soil horizons can form in a matter of several hundred years or less, but changing the parent material into a fully developed soil can take thousands or hundreds of thousands of years.

Estimating the age of a soil is difficult and is not absolute. Present-day soils provide clues to changing environmental conditions, such as climate change, volcanic activity, and geologic uplift. Even after a soil has formed, it is subject to the influence of the other factors of soil formation. For example, soils in valleys may have undergone cyclic periods of deposition, development, and erosion over long periods of time. Some landscapes are forming, others are degrading, and many are forming and degrading simultaneously.

The importance of time to the process of soil formation is related to periods of stability and instability. Soils on young landscapes, such as flood plains where deposition is active, have not had sufficient time to develop surface horizons with an accumulation of organic matter or to develop horizons that have been altered because of instability. Soils on fan terraces, foothills, and mountains have been stable for long enough periods for the formation of well expressed horizons of illuviated clay. Soils that formed on alluvial fans have developed surface horizons with an accumulation of organic matter because of the associated grass-dominated vegetation. Subsurface layers have been only minimally altered because of the young age of the sediments.

Topography

Topography, or the shape of the landscape, affects soil formation through its influence on climate, precipitation, temperature, and living organisms, specifically, the vegetative cover. Topography includes elevation, slope, aspect, and landscape position.

Elevation influences soil formation through its effect on precipitation and temperature. As elevation increases, air and soil temperatures decrease and the amount of precipitation increases. The elevation in this survey area ranges from 55 to 6,115 feet (17 to 1,864 meters). Landscape position and slope influence soil formation by affecting the movement and retention of water in the soil. The aspect of a slope influences soil formation by modifying soil climate.

Slope influences drainage, runoff, and erosion. The slope of valley landscapes is generally level or nearly level. Precipitation that falls on flood plains, in flood basins, and on alluvial fans is retained in the soils because there is relatively little runoff. Fan terraces, foothills, and mountain slopes range from gently sloping to very steep. Generally, the soils that formed on ridgetops have more strongly expressed horizons than the soils on steep canyon side slopes. Slope stability allows parent material to develop in place. With little runoff, more water is available to percolate through the soil, promoting soil formation. Active, steep slopes are unstable, and parent material on

these slopes may move downhill as colluvium or dry ravel. Runoff can be high, slowing the development processes because there is less water available. Complex slopes are both convex and concave. Generally, concave slopes are more stable than convex slopes and tend to have soils with more strongly expressed horizons because of a greater amount of available water and, in response, more luxuriant vegetative growth and increased development.

Aspect is the compass direction that a slope faces. Generally, south- and west-facing slopes are hotter and drier than north- and east-facing slopes. In some areas soils are more strongly developed on north- and east-facing slopes because cooler temperatures allow more effective moisture to aid in translocating clays through the profile. In the southeast part of the survey area, for example, the soils on south-facing mountain slopes at high elevations have developed an ochric epipedon and a cambic horizon, whereas the soils on north-facing slopes have developed an umbric epipedon and an argillic horizon. Vegetative communities adapt to differences in climatic conditions influenced by aspect. Because of differences in effective moisture and temperature, for example, ponderosa pine grows on north- and east-facing slopes at the lower elevations and on south- and west-facing slopes at the higher elevations.

Living Organisms

Living organisms play an important role in soil formation. They are responsible for physical disturbances, additions and incorporation of organic matter, nutrient cycling, chemical transformations, removal of water and nutrients, and changes in structure and porosity.

Animals, including humans, birds, and reptiles, influence soil formation by causing physical disturbances, such as digging or burrowing, creating pathways for water entry, and mixing horizons. As birds disperse seeds, they affect the distribution of plant communities. Also, they use insects and earthworms as food.

Soil organisms, such as arthropods, bacteria, earthworms, fungi, nematodes, and protozoa, are extremely important in driving the soil-forming process by incorporating and decomposing organic matter and transforming chemical compounds in the soil. They are primarily responsible for the carbon-nitrogen cycle and nutrient cycling.

Arthropods, such as ants, beetles, centipedes, millipedes, mites, scorpions, spiders, and springtails, are invertebrates that live in the soil. They shred plant materials as they eat bacteria and fungi, enhancing the decomposition of litter into organic matter in the soil. Also, they improve soil structure by burrowing and releasing enzymes, aggregating soil particles, controlling the number of soil organisms by predation, mineralizing nutrients and making them available to plants by consuming fungi, feeding on plant roots, and physically improving porosity and water infiltration as they burrow.

Bacteria play a role in the decomposition of carbon. They immobilize nutrients, such as nitrogen and carbon; impact the nitrogen and carbon cycles; fix nitrogen in a symbiotic relationship with plant roots; use compounds, such as nitrogen, sulfur, hydrogen, manganese, and iron; and influence porosity and soil structure.

Earthworms live throughout the soil and perform many functions. They decompose organic matter and incorporate it into the soil by shredding and burying plant residue. Earthworm channels provide conduits for roots and allow water to infiltrate the soil. The earthworms also mix soil and exude compounds that aggregate soil particles, forming structure.

Fungi decompose dead organic matter, release carbon dioxide and organic acids, immobilize nutrients, and cause or control plant diseases. Mycorrhizal fungi live in or on the roots of grasses, shrubs, and trees and have a symbiotic relationship with roots. By utilizing plant carbon, they improve the availability of nutrients, making them more soluble. They also effectively increase the surface area of the plant roots.

Nematodes are worm-shaped organisms that perform mostly beneficial functions in the soil. They mineralize nutrients, especially ammonium, after consuming fungi or bacteria and help to distribute bacteria and fungi throughout the soil by transporting them on their surfaces. Certain nematodes that attach to plant roots cause disease in agricultural crops and are considered pests.

Protozoa require soil water for movement. Their main function in the soil is to consume nutrient-rich bacteria, mineralizing excess nutrients and making them available for uptake by plant roots (USDA, 1999).

Vegetation significantly affects soil formation by providing a source of organic matter. It influences the cycling of nutrients and their release during decomposition, uses nutrients and water, and causes physical alteration as roots grow through the soil, forming channels, which provide a conduit for air and water. Plant communities have adapted to climate, aspect, elevation, and associated soils.

This survey area has many plant communities because of the diversity of soils, parent material, elevation, and associated climatic factors. A generalized vegetative transect beginning at the Sacramento River and ending in the high mountains includes the many plant communities. These are riparian forest on flood plains, emergent wetland (now rice crops) in basins, valley oak-savanna (now cropland) on alluvial fans, annual grassland on terraces, blue oak-savanna in the low foothills, shrub-hardwood in the high foothills, conifer-hardwood in the low mountains, mixed conifer at the next level of the mountains, and conifer communities dominated by white fir and red fir in the high mountains.

Human activities that manipulate vegetation include brush clearing, crop production, natural species restoration, and forest management. These activities influence organic matter additions and decomposition rates, soil temperature, and moisture levels. When water and/or fertilizer are added to the soil, the soil-forming process is accelerated.

Such human activities as digging, tilling, leveling, and filling disturb soil horizons through mixing and removal. The natural hydrology associated with soil formation has been altered by the construction of dams and levees for flood protection, by the construction of ditches and canals for water conveyance, and by irrigation or drainage systems for agricultural production. This alteration changes the amount of water that is available to enter the soil and the period when the water is available. For example, the application of irrigation water to produce an annual crop of rice is equal to approximately 2.5 years of present annual rainfall. In this survey area, rice has been irrigated since about 1915. The irrigation water added to the soil amounts to about 327 acre-feet of water, as compared to 136 acre-feet added naturally as rain. By far, the greatest human impact on soil formation occurs when roads and buildings are constructed. This construction can essentially stop the soil-forming process by sealing off the surface of the soil, thereby eliminating any further addition of water, organic matter, air, and nutrients.

Diagnostic Horizons and Characteristics

By Dean W. Burkett, Soil Survey Project Leader, Natural Resources Conservation Service.

The five soil-forming factors produce diagnostic horizons with a natural arrangement, which collectively form a soil profile. Horizon development is regulated by four processes—additions, removals, transformations, and translocations. The characteristics of a given soil are the result of unique combinations of diagnostic horizons or the lack of diagnostic horizons. Soils are classified, mapped, and interpreted on the basis of the development and arrangement of horizons. A formal soil classification system, or soil taxonomy, is based on the identification of diagnostic horizons described in the section “Classification of the Soils.” Complete descriptions of surface and subsurface diagnostic horizons are given in “Soil Taxonomy” (Soil Survey Staff, 1999). Abbreviated descriptions of the diagnostic horizons in this survey area

are given in the paragraphs that follow. Also, three diagnostic characteristics (densic material, lithic contact, and paralithic contact) are described.

An **ochric epipedon** is a light colored surface horizon or a dark but thin surface horizon with or without a relatively high content of organic matter. Base saturation (by ammonium acetate) may be less than or more than 50 percent. Generally, the ochric epipedon fails to meet the definition of the other seven epipedons described in "Soil Taxonomy" because it is too thin, has too high a color value or chroma, contains too little organic matter, or is hard or massive. Soils that are very young or lack development, soils that are fairly old and moderately weathered, soils that are unstable, and soils that are too moist or too cold to meet the definition of the other seven epipedons commonly have an ochric epipedon. Generally, organic matter does not accumulate because there is little vegetation to supply organic matter or the organic matter has been oxidized.

A **mollic epipedon** is a thick, dark surface horizon that contains a minimum of 0.6 percent organic carbon (1 percent organic matter) and has base saturation (by ammonium acetate) of 50 percent or more. Mollic epipedons form in areas where landforms are old and stable, precipitation is adequate for the production of fair to luxuriant plant growth in normal years, and air and soil temperatures are sufficient to aid organisms in the decomposition of significant amounts of organic matter and in the incorporation of organic matter into the soil.

An **umbric epipedon** is a dark surface horizon that has all of the characteristics of a mollic epipedon, except that its base saturation (by ammonium acetate) is less than 50 percent in some or all parts. Umbric epipedons form in areas with relatively high precipitation that removes or leaches base cations from the soil profile. They generally are in areas of coniferous forests.

An **argillic horizon** is a subsurface horizon with a significantly higher percentage of clay than the overlying soil material. Parent material must undergo long periods of landscape stability, significant amounts of precipitation, and relatively warm temperature for clay formation and movement of clay from an upper horizon to a lower horizon. Alternating seasonal periods of rainfall and the subsequent dry periods promote the formation of an argillic horizon. The part of the soil that has undergone a loss of clay is referred to as an eluvial horizon. The part that gains clay is referred to as an illuvial horizon. A few thousand years or more are needed for the formation of an argillic horizon.

A **calcic horizon** is an illuvial horizon with a significant accumulation of calcium carbonates. Calcium carbonates are fairly mobile and move up and down through the profile seasonally. During winter, they move downward in percolating soil water. During spring and summer, as the soil dries or water tables drop, carbonates move upward because of capillary rise, evaporation, and transpiration. Eventually, the calcium carbonates accumulate to form a calcic horizon.

A **cambic horizon** is a subsurface horizon resulting from physical alterations, chemical transformations or removals, or a combination of two or more of these processes. The physical alteration that accompanies shrinking and swelling causes cracks to open and close. The physical forces associated with expansion wedge up blocks of clay, resulting in the formation of slickensides. Iron in the soil is reduced during seasonal periods of saturation and is oxidized during dry periods, producing redoximorphic features, which are considered evidence of the chemical transformation of iron.

A **duripan** is a subsurface horizon that is cemented by illuvial silica to the degree that water movement and the penetration of most roots are restricted. Although the degree of cementation varies, almost all duripans are most strongly cemented at the upper interface. The degree of cementation decreases with increasing depth. A stable environment, moderate, seasonally distributed rainfall, and an available source of silica are required for the formation of a duripan. Duripans occur on old landscapes, generally

between 100,000 and 2.6 million years old. The available silica commonly is from volcanic activity. Soluble silica moves through the soil profile, begins to accumulate, and plugs pores at a depth that corresponds to the amount of available precipitation. Silica continues to accumulate, eventually forming a laminar cap that thickens over time.

Densic material consists of tightly packed, noncemented, relatively unaltered soil material that is water and root restricting, causing seasonal saturation.

Lithic contact is the boundary between soil material and an underlying coherent material, commonly hard or unweathered bedrock. Generally, roots cannot penetrate into lithic materials, but water may move downward through cracks or laterally across the top of the lithic contact. A lithic contact is sufficiently hard to make hand digging impractical.

Paralithic contact is the boundary between soil material and the underlying partially weathered, weakly consolidated paralithic material or soft bedrock. Roots generally cannot penetrate into paralithic materials, though they can grow into the cracks.

Developmental Sequences

By Dean W. Burkett, Soil Survey Project Leader, Natural Resources Conservation Service.

The relationships between landform, parent material, climate, soil properties, and the resulting vegetation at any given place correlate directly to the five factors of soil formation, which determine the arrangement of horizons that form a specific soil. Knowledge of these zonal relationships or developmental sequences (O'Geen, A.T.) helps soil scientists and others to understand the properties and interpretations of the soils in the survey area.

Two developmental sequences are described in the following paragraphs. Figure 28 shows the location of block diagrams (figures 29 and 30) of the two developmental sequences.

The first developmental sequence is a climosequence of soils in which the parent material is derived from Cascade volcanic material. Refer to figure 29 for help in understanding the soil and landscape relationships in this sequence. The second development sequence includes soils and landscapes formed from a variety of parent materials primarily associated with the Sierra Nevada foothills and mountains. Refer to figure 30 for help in understanding the soil and landscape relationships in this sequence. The general soil map of this survey area can help to provide an understanding of the overall picture of the relationships of soils, landscapes, and parent materials in the area.

Cascade Developmental Sequence

This sequence includes soils on flood plains, in flood basins, on alluvial fans, on fan terraces, and on foothills and mountains.

Thermic Soils on Flood Plains

Refer to the light blue area in figure 29 and to general soil map unit 1.

The soils on large river flood plains in the Sacramento Valley are the result of sediment deposition during periods of flooding. Since 1900, there have been 11 major floods on the Feather River and 15 major floods on the Sacramento River. There have been 10 major floods on the Sacramento River since Shasta Dam was completed in 1945.

Prior to the construction of dams and levees, the rivers were free to meander within the natural flood plains. The particle size of the sediment deposited is dependent on the specific reach of the river and on the velocity of the water as it flows. The

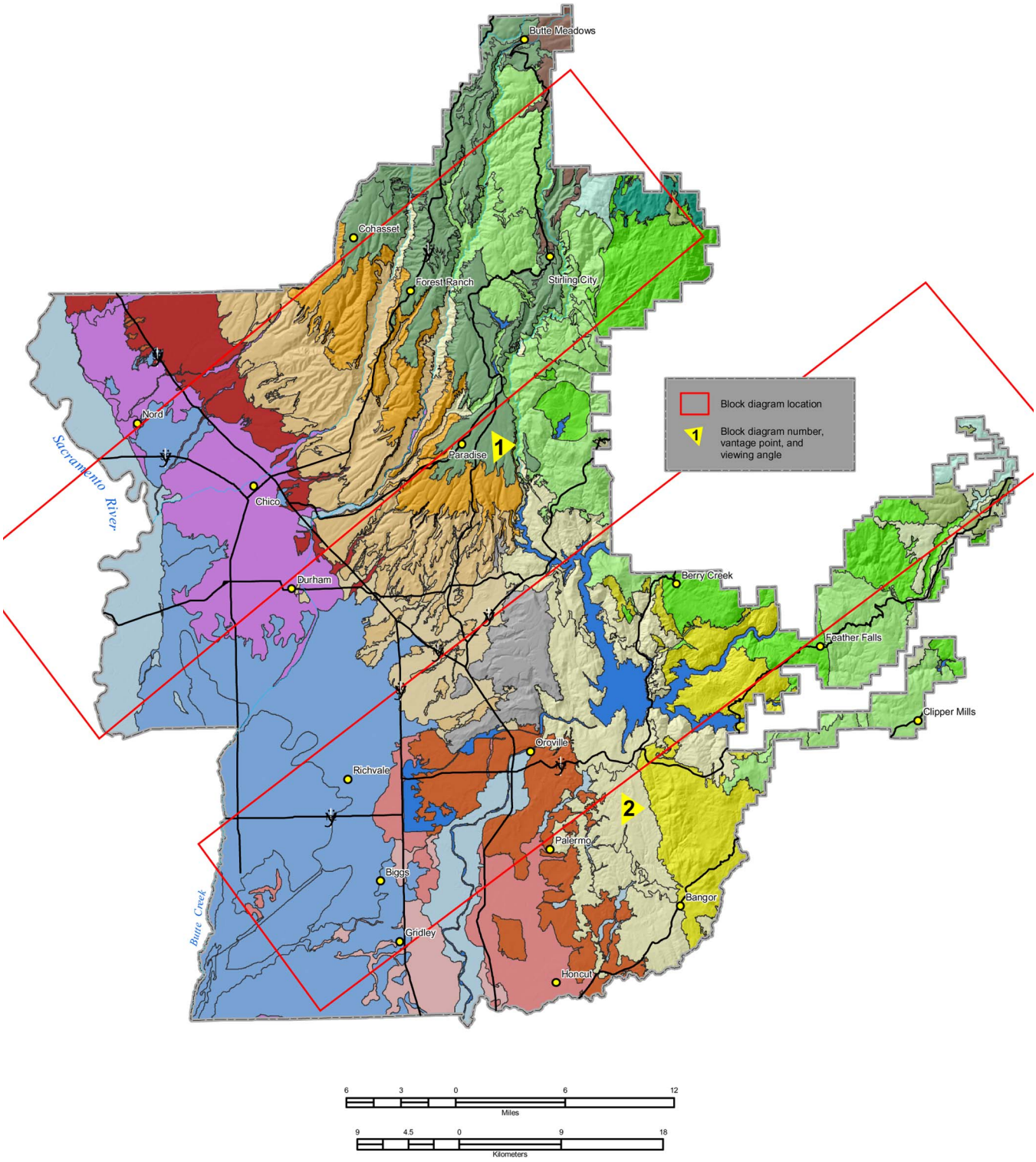
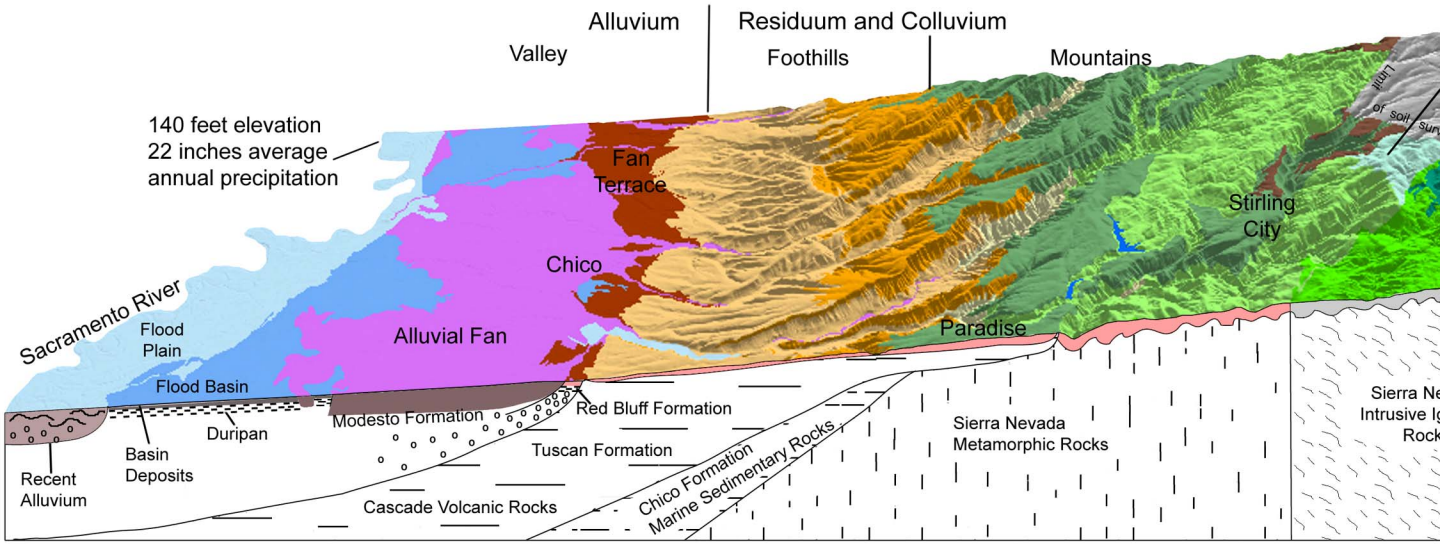


Figure 28.—Map showing the locations and viewing angles of the block diagrams of developmental sequences (figs. 29 and 30).

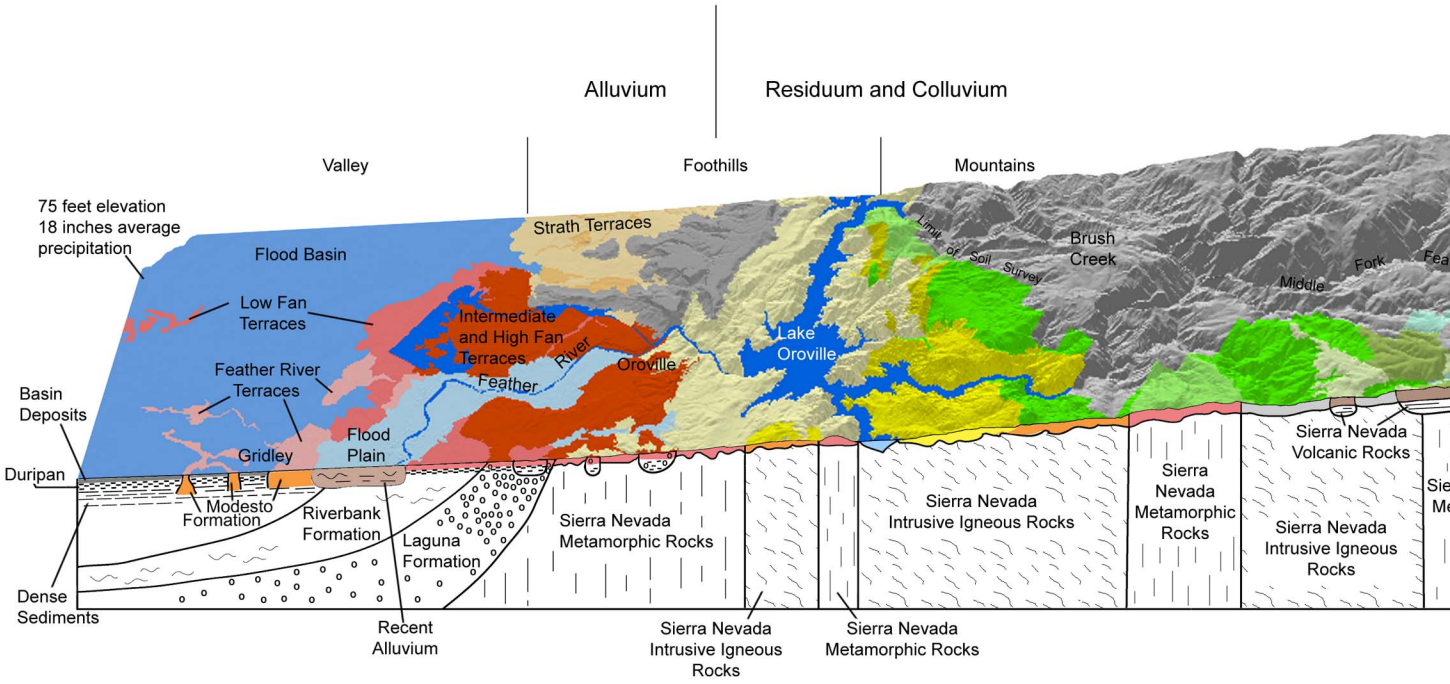


Legend

Geologic formations are conceptual, for illustrative purposes only, and are not to scale.

- Thermic Soils on Flood Plains in the Sacramento Valley
- Thermic Soils in Flood Basins in the Sacramento Valley
- Thermic Soils on Alluvial Fans in the Sacramento Valley
- Thermic Soils on Fan Terraces Formed from Cascade Alluvium in the Sacramento Valley
- Thermic Soils on Volcanic Cascade Foothills
- Thermic Soils on Metamorphic Sierra Nevada Foothills
- Mesic Soils on Volcanic Cascade Foothills
- Mesic Soils on Volcanic Cascade Mountains
- Mesic Soils on Metamorphic Sierra Nevada Mountains
- Mesic Soils on Plutons in Sierra Nevada Mountains
- Frigid Soils on Volcanic Cascade Mountains
- Frigid Soils on Volcanic Sierra Nevada Mountains
- Frigid Soils on Metamorphic Sierra Nevada Mountains
- Frigid Soils on Moraines in Sierra Nevada and Cascade Mountains
- Water

Figure 29.—Block diagram 1.



Legend

- Thermic Soils on Flood Plains in the Sacramento Valley
- Thermic Soils in Flood Basins in the Sacramento Valley
- Thermic Soils on Feather River Terraces in the Sacramento Valley
- Thermic Soils on Low Fan Terraces Formed from Sierra Nevada Alluvium in the Sacramento Valley
- Thermic Soils on Intermediate and High Fan Terraces Formed from Sierra Nevada Alluvium in the Sacran
- Thermic Soils on Lovejoy Basalt and Ione Sediments on Sierra Nevada Foothills
- Thermic Soils on Strath Terraces on Volcanic Cascade Foothills
- Thermic Soils on Volcanic Cascade Foothills
- Thermic Soils on Metamorphic Sierra Nevada Foothills
- Thermic Soils on Plutons in Sierra Nevada Foothills
- Mesic Soils on Metamorphic Sierra Nevada Foothills
- Mesic Soils on Metamorphic Sierra Nevada Mountains
- Mesic Soils on Plutons in Sierra Nevada Mountains
- Mesic Soils on Volcanic Sierra Nevada Mountains
- Frigid Soils on Volcanic Sierra Nevada Mountains
- Frigid Soils on Metamorphic Sierra Nevada Mountains
- Water

Geologic formations are conceptual, for illustrative purposes only, and are not to scale.

Figure 30.—Block diagram 2.

sequence of deposition is dependent on the velocity and volume of water flowing through the main channel and the amount of material in suspension (the suspended load). During flood stage, the river carries sediment and moves previously deposited sand, gravel, and cobbles. The river also gains additional suspended load from tributaries. For example, Stony Creek carries gravel that enters the Sacramento River in the reach between Big Chico Creek and the Butte-Glenn county line. As the velocity of the water slows, the coarsest material (e.g., gravel) drops out of suspension. If the velocity slows further, the next largest size material (sand) drops out. Next to drop out of suspension is silt, and the last to drop out is clay, the smallest sized particles. The reach of the river determines the size of the particles carried in suspension as the water speeds up and slows down when it flows downstream. During periods of flooding, the water has exceeded the capacity of the main channel and begins to flow out of the banks of the main channel and to deposit sediment (overbank deposits).

In a perpendicular direction away from the main channel, a typical sequence of soils and landforms is created by the power of the river to either erode or deposit sediment. Directly adjacent to the main channel and commonly within the main channel, cobbles, gravel, and sand are deposited, forming point bars. The sand, gravel, and cobbles shift annually and are moved by flowing water until the active channel moves or the point bar becomes stabilized. This new sediment is not considered soil because it is too young (recent) and has yet to undergo any of the soil-forming processes. Riverwash is a miscellaneous area typically occurring in and adjacent to the main channel composed of sand and gravel.

The meander-belt portion of the flood plain occurs away from the river channel. It consists of light colored, very deep, coarse textured soils with some stratification, poorly defined horizonation, and no diagnostic horizons or discernible morphological features. These soils include Typic Xerofluvents, which are represented by the coarse-loamy Gianella soils. These soils are throughout the meander belt and have varying textures in the surface layer because of flooding and in places have gravel lenses within the profile. Oxyaquic Xerofluvents are represented by the coarse-loamy Columbia soils, which have a fluctuating water table below a depth of 20 inches (51 centimeters) and are in old channels that have been partially filled with sediment during channel migration. Aeric Fluvaquents are typified by the coarse-loamy Columbia taxadjunct in oxbows, which are crescent-shaped channels that have been partially filled with sediment and often remain wet throughout the year and, in early stages, occur as lakes. Because the meander belt is flooded, only riparian species, such as willow, cottonwood, boxelder, blue elderberry, and coyote brush, can become established on this landform.

A flood plain consisting of very deep, silty soils occurs outside of the meander belt and at a slightly higher elevation. The soils on this flood plain include Fluvaquentic Haploxerepts, which are represented by the fine-silty Parrott soils. These soils are on bars and have an ochric epipedon and a cambic horizon. Representing Aquic Haploxerepts are the fine-silty Vermet soils, which have an ochric epipedon, a cambic horizon, aquic conditions, and redoximorphic features and are in channels that make up a bar-and-channel topography that appears rolling. Many areas have been leveled for agriculture. Because flooding is less frequent on this flood plain than in the lower areas and floodwater moves at a lower velocity, valley oak became established. In areas used for orchard crops, most of the soils on the flood plain have a slightly darkened surface layer because of the accumulation of leaves and herbaceous growth.

A transitional zone occurs between flood plains and distal alluvial fans. The soils in this zone include Fluventic Haploxerepts, which are represented by the very deep Farwell soils. The soil profile provides evidence that these soils formed in alluvium derived from flood-plain sediments deposited over distal alluvial fan sediment. The soils have an ochric epipedon and a cambic horizon and have 27 to 35 percent clay in the particle-size control section. They are rarely flooded or occasionally flooded.

Thermic Soils in Flood Basins

Refer to the dark blue area in figure 29 and to general soil map units 3 through 6.

Flood basins are in the lowest position on the landscape. The sediment that fills the basin is less than 10,000 years old (State of California, Department of Water Resources, 1978). Clay-sized particles in suspension are the last of the sediment load carried by floodwater to settle. Very slowly moving or stagnant water is required for clay to fall out of suspension. The clay deposits are dominantly smectitic clay, range in thickness from 20 to more 60 inches, and have an average depth of 38 to 42 inches. The clay is underlain by unrelated sediments, which are cemented by silica in the upper part.

The soils in the basins include Xeric Epiaquerts, which are represented by the deep Lofgren soils, and Xeric Duraquerts, which are represented by the moderately deep Blavo soils. The Lofgren and Blavo soils are both very-fine, have as much as 70 percent clay, and are in the trench or lowest portion of the flood basin. The natural landscape had meandering channels and was hummocky because of the physical forces of the clay exhibited during seasonal periods of shrinking and swelling. The natural emergent marsh vegetation provided enough organic matter to produce a mollic epipedon. Cracks that formed during dry periods, slickensides that formed by shrinking and swelling, and redoximorphic features produced during the reduction and oxidation of iron under saturated conditions provide evidence of alteration. The soils have a cambic horizon. They also have a duripan with a very thin indurated cap over weakly cemented to strongly cemented sediments. A fluctuating water table is perched on top of the duripan. Refer to general soil map unit 3.

Much of the remainder of the flood basins is occupied by Xeric Epiaquerts, which are represented by the very deep Edjobe soils and the deep Esquon soils, and Xeric Duraquerts, which are typified by the moderately deep Neerdobe soils. The Edjobe, Esquon, and Neerdobe soils have 40 to 60 percent clay. They exhibit the same properties as those of the Lofgren and Blavo soils, but they also have an ochric epipedon, which is attributed to the oxidation of organic matter during long periods of dry conditions in summer. Refer to general soil map unit 4.

Clayey buried soils that formed in outwash resulting from hydraulic mining for gold are within the flood basins. Large pulses of sand and silty sediment were released into creeks, filling channels and causing overbank flooding and deposition of sediment on the surface of the Esquon and Neerdobe soils. Oxyaquic Xerofluvents along Butte Creek are represented by the very deep Govstanford soils, which have 20 to 36 inches of coarse-loamy hydraulic mine sediment over basin clay. Very deep Oxyaquic Xerofluvents are along Dry Creek, which becomes the Cherokee Canal and ends at Sanborn Slough. These soils have 24 to more than 72 inches of coarse-loamy mine sediment deposited over clay in the upper reach, fine-loamy mine sediment in the middle reach, and fine textured mine sediment in the lower reach. The mine sediments, locally named “slickens,” were thick enough in areas near the town of Richvale for the production of vegetables. Refer to general soil map units 3 and 4.

Two interfan basins are between Rock Creek and an area south of Mud Creek. They are between alluvial fans and adjacent to fan terraces. The soils in these basins include Typic Haploxererts, which are represented by Bosquejo soils. These soils are very deep to volcanic sediments, have a fine particle-size class, have a mollic epipedon and a cambic horizon, form cracks when dry, have slickensides, and have a seasonally fluctuating water table. Also included are Aquic Durixererts, which are represented by Galt soils. These soils are moderately deep to a duripan, have 40 to 60 percent clay, have slickensides, are seasonally saturated, form cracks when dry, and are on remnant terraces of the Red Bluff Formation amongst the interfan basins. Refer to general soil map unit 5.

Aquic Durixererts, which are typified by the moderately deep Subaco taxadjunct, are in the southernmost part of the Butte Basin, adjacent to alluvial fans of the Sutter

Buttes. These soils are underlain by a thin duripan, which caps thick deposits of silt originating from ancestral Lake Mohawk and associated with the lower Modesto Formation (Busacca, 1982). The soils have a mollic epipedon, have surface-initiated polygonal cracks that open when the soils are dry, and have a calcic horizon resulting from an accumulation of calcium carbonate and some sodium. In the past, acidic cannery waste was applied to these soils in order to reduce high levels of calcium carbonate, the reaction (pH) of the soils, and the adverse effects of the soils on crop production. This management practice proved unsuccessful because of poor drainage and a fluctuating water table, which did not allow calcium carbonate to be eliminated from the soils. Because farming is not profitable, most areas of these soils are used as wildlife refuges. Refer to general soil map unit 6.

The soils on distal alluvial fans and in transitional areas from distal alluvial fans to basins include Pachic Haploxerolls, which are represented by Busacca soils. These soils have a thick mollic epipedon and a cambic horizon and average 35 to 40 percent clay in the particle-size control section.

Thermic Soils on Alluvial Fans

Refer to the purple area in figure 29 and to general soil map units 8 and 9.

The alluvial fans in this survey area generally are gently sloping areas between flood plains to the west or flood basins to the south and terraces or foothills to the east. The sediment deposited by Pine, Rock, Mud, Big Chico, and Little Chico Creeks is dominantly of Cascade volcanic origin, whereas the sediment deposited by Butte Creek is of Sierra Nevada and Cascade origin. The sediments that make up the Modesto Formation probably are about 9,000 to 70,000 years old (Busacca, 1982). The Modesto Formation is divided into a younger, upper member (9,000 to 29,000 years BP) and an older, lower member (probably 29,000 to 70,000 years BP). The natural vegetation included valley oak and perennial and annual grasses and forbs, which contributed large amounts of organic matter and formed a thick mollic epipedon. Presently, almond and walnut orchards are grown on these highly productive soils. Alluvial fans can be subdivided on the basis of relative position away from the point where creeks debouch from the stream terraces or foothills. Pachic Haploxerolls are the dominant soils on alluvial fans and are represented by Conejo, Almendra, and Vina soils.

Conejo soils occur on the distal portion of the alluvial fans, which is adjacent to flood basins and in some areas flood plains and is the part of the fans farthest away from fan terraces and foothills. These highly productive soils have a thick mollic epipedon, a cambic horizon, 27 to 35 percent clay in the particle-size control section, and calcium carbonate in the subsoil. Refer to general soil map unit 8.

Almendra soils are in mid-fan positions, which are higher than distal fans. These soils have a thick mollic epipedon and a cambic horizon and differ from Conejo soils in that they do not have calcium carbonate in the subsoil and have 18 to 27 percent clay in the particle-size control section. Ignord soils are on beach ridges, which formed when water in the flood basin was at a high level and wind-pushed waves could lap up on the alluvial fan. These soils have moderate levels of calcium carbonate, a thick mollic epipedon, and a cambic horizon. Refer to general soil map unit 8.

Vina soils have a thick mollic epipedon, a cambic horizon, and 18 to 27 percent clay in the particle-size control section and formed throughout the alluvial fans, along channels. Refer to general soil map unit 8.

Representing Typic Haploxerolls are Charger soils, which are on the uppermost portion of the proximal alluvial fans. These soils have a mollic epipedon, have a cambic horizon, and have gravel deposits at a depth of 40 to 80 inches (102 to 203 centimeters). Refer to general soil map unit 8.

Haploxerolls that are very deep or deep to an unrelated indurated duripan formed in alluvium weathered from volcanic rocks deposited over the fan terraces in areas north

of Mud Creek. These soils have a mollic epipedon and a cambic horizon. Refer to general soil map unit 9.

Thermic Soils on Fan Terraces

Refer to the reddish brown area in figure 29 and to general soil map unit 10.

Low fan terraces are slightly higher than and subtly grade uphill from mid and proximal alluvial fans. The soils on these fan terraces include Pachic Argixerolls, which are represented by Chico soils. These soils have older alluvial deposits and profile development than the soils on alluvial fans, indicating a longer period of stability. They have a thick mollic epipedon, a weak argillic horizon with an average of 25 to 35 percent clay, and base saturation of 95 to 100 percent. On the ground, it is difficult to distinguish the low fan terraces from the alluvial fans. A slight rise in topography is about the only observable feature that indicates the boundary.

Alluvial fan deposits eroded from the Tuscan Formation make up the Redbluff Formation, which is 0.45 to 1.1 million years old (Harwood, Helly, and Doukas, 1981). The soils currently on this landscape are remnants of perhaps much thicker and older soils that were removed or stripped away by catastrophic erosional events, or "blowouts." These fan terraces have been subject to various periods of deposition and erosion, evidenced by patterns of soils with depths ranging from very shallow to very deep and soils that are underlain by a thick, indurated, cobbly duripan. The duripan has been stripped away in many areas, exposing the underlying volcanic sediments.

At a higher elevation than the Chico soils are Mollic Haploxeralfs, which are represented by the very deep Redsluff soils. These soils formed in overbank alluvium deposited over channel alluvium on low fan terraces. They have an ochric epipedon, an argillic horizon with an average of 25 to 35 percent clay, and 2 to 25 percent rock fragments. The depth to extremely gravelly channel deposits ranges from 35 to 65 inches. Refer to general soil map unit 10.

Various periods of erosion and deposition are exhibited by Munjar soils, which are moderately deep to an extremely gravelly duripan and have a loamy-skeletal argillic horizon with 27 to 35 percent clay; the Tuscan taxadjunct, which is moderately deep to an extremely cobbly duripan and has an argillic horizon with 35 to 40 percent clay; and Anita soils, which are shallow to an indurated duripan, do not have rock fragments, and are clayey throughout.

Typic Durixeralfs occur on high fan terraces with a mound-swale microrelief in areas of the Redbluff Formation. These Durixeralfs include Redtough soils, which are shallow to an indurated duripan (fig. 25), have an ochric epipedon, have an argillic horizon with 18 to 27 percent clay, have redoximorphic features, have a fluctuating water table that is perched on the duripan, and are on mounds. Also included are Redswale soils, which are very shallow to an indurated duripan; have an ochric epipedon; have an argillic horizon with 18 to 25 percent clay; have redoximorphic features, such as manganese coatings on the duripan; have a fluctuating water table; and are in swales. Annual grasses and forbs make up the plant community because of saturation and a limited rooting depth. Refer to general soil map unit 10.

Thermic Soils on Cascade Foothills

Refer to the tan areas in figure 29 and to general soil map units 17 and 18.

The soils on the Cascade foothills formed directly over bedrock, mainly mudflow breccia (lahar) and volcanic sandstone, which make up the Tuscan Formation, about 1.3 to 3.3 million years old (Lydon, 1968). This landscape consists of long, nearly level to moderately sloping ridges and canyons with strongly sloping to very steep slopes and some areas of gently sloping canyon bottoms. Cliffs with nearly vertical slopes are common. The Tuscan Formation consists of four units (Helley and Harwood, 1985). Unit A, the oldest, consists of interbedded lahars, volcanic conglomerate, volcanic sandstone, and siltstone containing metamorphic rock fragments. Unit B consists of

interbedded lahars, volcanic conglomerate, and volcanic sandstone. Unit C consists of lahars with some interbedded volcanic conglomerate and sandstone. Unit D consists of fragmental deposits of andesite, basaltic andesite, pumice, and obsidian. Unit D is not exposed in this survey area.

Lithic Haploxeralfs occur on the lowest part of the foothills. They are represented by Doemill and Jokerst soils. Doemill soils are on mounds on ridgetops and on the side slopes of ridges. They are shallow to lithic mudflow breccia and have an ochric epipedon, an argillic horizon with 18 to 27 percent clay, 2 to 35 percent rock fragments, and a fluctuating water table that is perched on the hard bedrock. Redoximorphic features occur in the argillic horizon and coat the upper surface of the bedrock. Jokerst soils are in swales on ridgetops and on the side slopes of ridges. They are very shallow to lithic mudflow breccia. They have an ochric epipedon; an argillic horizon with 18 to 24 percent clay; 10 to 35 percent rock fragments; redoximorphic features, such as iron-manganese masses and concretions throughout and manganese coatings on the uppermost surface of the bedrock; and a fluctuating water table that extends from the bedrock to the surface of the soils. Base saturation ranges from 60 to 75 percent in the argillic horizon of both soils. The plant community consists of annual grasses and forbs because of saturation and a limited rooting depth. Refer to general soil map unit 17.

The soils on the mid-level foothills at elevations of about 200 to 1,700 feet (61 to 518 meters) include shallow Xerorthents, which have a paralithic contact of mudflow or a lithic contact of volcanic sandstone, and moderately deep or deep Typic Haploxeralfs, which are on side slopes and have an ochric epipedon, an argillic horizon with 27 to 45 percent clay, 15 to 65 percent rock fragments, base saturation of more than 75 percent, and a paralithic or lithic contact of mudflow or volcanic sandstone. Annual grasses and forbs, shrubs, blue oak, and foothill pine are characteristic of the vegetation in this zone. Refer to general soil map unit 18.

Mesic Soils on Cascade Foothills

Refer to the orange area in figure 29 and to general soil map unit 25.

The soil temperature regime changes from thermic to mesic at an elevation of about 1,220 feet (372 meters) on ridgetops and about 500 feet (152 meters) on north- and east-facing slopes in canyons. The soils on ridgetops include Lithic Xerorthents, which are represented by the very shallow Rockstripe soils. These soils have an ochric epipedon, a cambic horizon, base saturation of 50 to 75 percent, and a lithic contact of mudflow breccia. Other soils on these foothills include Ultic Haploxeralfs, mesic, which are moderately deep or deep to either a paralithic or lithic contact of mudflow breccia and have an ochric epipedon, an argillic horizon with 27 to 40 percent clay, and 5 to 80 percent rock fragments, and Ultic Haploxeralfs, which are moderately deep or deep to either a paralithic or lithic contact of volcanic conglomerate and have an ochric epipedon, an argillic horizon with 27 to 35 percent clay, and 10 to 50 percent rock fragments. These foothills are dominated by shrubs, annual grasses and forbs, foothill pine, and canyon live oak.

Mesic Soils on Cascade Mountains

Refer to the dark green area in figure 29 and to general soil map units 27, 28, and 29.

Upslope from the Cascade foothills is a zone with a mesic soil temperature regime and a plant community consisting mainly of ponderosa pine and California black oak. The soils in this zone include Andic Haploxeralfs, which are represented by the very deep Paradiso soils on ridgetops and the deep Schott soils on ridgetops and side slopes. Both of these soils have an ochric epipedon with andic material to a depth of

15 inches (38 centimeters) and have base saturation of 35 to 50 percent. Paradiso soils have an argillic horizon with 35 to 50 percent clay, and Schott soils have an argillic horizon with 18 to 35 percent clay. Andic Palexeralfs are represented by the very deep Tusccoll soils on backslopes in canyons. These soils have an ochric epipedon with andic material to a depth of 14 inches (36 centimeters), an argillic horizon with 22 to 35 percent clay (the content of clay increasing with increasing depth), and base saturation of 35 to 50 percent. Refer to general soil map unit 27.

The zone of maximum soil formation occurs at elevations between 2,000 and 4,000 feet (610 and 1,219 meters). Annual precipitation is more than 60 inches (1,524 millimeters), and temperatures are optimum for pedologic processes to function. The soils in this area are in the mesic temperature regime. The area is referred to as the "banana belt" by the survey soil scientists, because of the ideal climate, high forest productivity, and well developed soils. Precipitation changes from rain to snow at an elevation of about 4,000 feet (1,219 meters). This point is referred to as the "effective snow line." At elevations above this point, pedogenesis begins to slow down, mainly because of cooler temperatures.

Representing Andic Haplohumults in this area are the very deep Mountyana soils on ridgetops. These soils have an ochric epipedon with andic material to a depth of 9 inches (23 centimeters), a thick argillic horizon with 18 to 35 percent clay, and base saturation of less than 35 percent. Typic Haploxerands are represented by the very deep Beecee soils on the side slopes of ridges. These soils have andic soil properties from the surface to a depth of 22 inches (0 to 53 centimeters), an ochric epipedon, and a cambic horizon. Representing Andic Dystroxerepts are the moderately deep Lydon soils, which have an ochric epipedon with andic material at a depth of 1 to 6 inches (3 to 15 centimeters), a cambic horizon, and a lithic contact of mudflow breccia or andesite. A mixed conifer plant community occurs on these soils. Refer to general soil map unit 28.

Ultic Haploxerands are represented by the deep Redbone soils on ridgetops. These soils are in the mesic temperature regime bordering on the frigid temperature regime and have andic soil properties to a depth of 16 inches (41 centimeters), an ochric epipedon, an argillic horizon, and a paralithic contact of mudflow breccia. They support mixed conifers dominated by white fir. Refer to general soil map unit 29.

Frigid Soils on Cascade Mountains

Refer to the brown and turquoise areas in figure 29 and to general soil map units 36 and 39.

Representing Typic Haploxerands in these mountains are the deep Bonepile soils on ridgetops at elevations of 4,600 to 5,660 feet (1,402 to 1,725 meters) and extending down to 3,320 feet (1,012 meters) in canyons. These soils formed in tephra deposited over residuum and have andic soil properties throughout, an ochric epipedon, a cambic horizon, glassy mineralogy, base saturation of 10 to 15 percent, and a paralithic contact of andesite or mudflow breccia. They support mixed conifers dominated by white fir; hardwoods, such as California black oak; and shrubs. Refer to the brown area in figure 29 and to general soil map unit 36.

Haploxerands, volcanic till, and Haploxerands, granitic till, are on moraines at high elevations in both the Cascade and Sierra Nevada Mountains. These soils have andic soil properties from the surface to a depth of about 20 inches (51 centimeters), have an ochric epipedon and a cambic horizon, and are moderately deep to very deep to a densic horizon of glacial till. They support mixed conifers, dominantly white fir and red fir. Refer to the turquoise area on the far right side of figure 29 and to general soil map unit 39.

Sierra Nevada Developmental Sequence

This sequence includes soils on Feather River terraces, fan terraces, foothills, and mountains.

Thermic Soils on Feather River Terraces

Refer to the pink area in figure 30 and to general soil map unit 11.

The soils on Feather River terraces formed in sediments that make up the Modesto Formation, approximately 9,000 to probably 70,000 years BP (Busacca, 1982). This formation is divided into a younger, upper member (9,000 to 29,000 years BP) and an older, lower member (29,000 to probably 70,000 years BP).

Representing Typic Haploxerolls on these terraces are the very deep Liveoak soils in distributary channels. These soils have a mollic epipedon and have an argillic horizon with 18 to 25 percent clay. Typic Haploxeralfs, such as the very deep Boga soils, have an ochric epipedon, an argillic horizon with 25 to 35 percent clay, redoximorphic features, a densic horizon, and a fluctuating water table that is perched on top of the densic horizon. The deep Loemstone soils generally have the same characteristics as the Boga soils, with the exception of depth. The densic horizon consists of sediment and has a discontinuous silica-cemented cap. It is speculated that glacial Lake Mohawk was breached and its sediments (from the Tahoe glaciation) were eroded and transported down the Feather River. The silt and clay spread as a sheet of uniform thickness across several hundred square miles of the lower Modesto flood plain (Busacca, 1982). These soils support annual grasses, forbs, and valley oak.

Thermic Soils on Low Fan Terraces

Refer to the light red area in figure 30 and to general soil map unit 12.

Above the Feather River terraces are low fan terraces in areas of the Riverbank Formation, which dates back to 103,000 to 450,000 years BP (Busacca, 1982). This formation is divided into a younger, upper member and an older, lower member. The soils on these terraces formed in alluvial sediment deposited by the Feather River during glacial periods. During interglacial periods, landscape stability allowed soil formation to begin. The profile characteristics of the soils are believed to correspond to various interglacial periods. The loamy part of the profile, including the A1, A2, and BAt horizons, represents the upper member. A discontinuity consisting of an abrupt texture change to clay in the 2Bt horizon and the next discontinuity, an indurated duripan (3Bqm horizon), represent the lower member.

Representing Abruptic Durixeralfs on these terraces are the moderately deep Eastbiggs soils, which have an ochric epipedon, an argillic horizon with 35 to 50 percent clay, an abrupt texture change to clay at a depth of 17 inches (43 centimeters), an indurated duripan, redoximorphic features, and a fluctuating water table that is perched on top of the duripan. Mollic Palexeralfs are typified by the very deep Kimball soils on the tops of dissected terraces at elevations slightly higher than those of the Eastbiggs soils. Kimball soils have an ochric epipedon, an argillic horizon with 40 to 45 percent clay, and an abrupt texture change to red clay at a depth of 17 inches (43 centimeters). Both soils have relatively few rock fragments and support annual grasses and forbs. Kimball soils also support valley oak.

Thermic Soils on Intermediate Fan Terraces

Refer to the dark red area in figure 30 and to general soil map unit 13.

Above the low fan terraces are intermediate fan terraces in areas of the Laguna Formation, which dates back to 1.7 to 3.6 million years BP (Busacca, 1982). This formation is divided into a younger, upper member and an older, lower member. The upper member has a gravelly cap that is recognized as part of the formation. The lower member consists of coarse alluvium, including fragments the size of stones,

cobbles, and gravel that were deposited by the Feather River. These deposits are exposed near Sycamore Hill, and this area is thought to be the location of the main channel of the Feather River at the time when the lower unit was being deposited. Following a change in base level, the Feather River cut through metavolcanic rocks, defining its present channel and depositing upper member alluvium.

The topography of the Laguna Formation is characterized by low, rolling, dissected hills with isolated remnant knobs. Observation of the soils indicates that there were various periods of deposition, soil formation, erosion, more deposition, soil formation, more erosion that stripped away the duripan, and more deposition that filled in channels and areas where the duripan was removed. The soils have well developed profiles with very strongly expressed diagnostic horizons. They are very shallow to very deep to a duripan. This variability of soil depth commonly occurs within a very short distance. There are "windows" where the duripan has been stripped away.

Aquic Durixeralfs on these terraces are represented by the moderately deep Oroville soils in swales. These soils have an aquic moisture regime; an ochric epipedon; an argillic horizon with 35 to 50 percent clay and 2 to 35 percent gravel; an abrupt texture change to gravelly clay at a depth of 13 inches (33 centimeters); an indurated, extremely gravelly duripan; redoximorphic features; and a fluctuating water table that is perched on top of the duripan. Representing Abruptic Durixeralfs are the moderately deep Thermalito soils on mounds. These soils have an ochric epipedon; an argillic horizon with 24 to 35 percent clay and 2 to 30 percent gravel; an abrupt texture change to gravelly clay at a depth of 25 inches (64 centimeters); an indurated, gravelly duripan; redoximorphic features; and a fluctuating water table that is perched on top of the duripan. Typifying Ultic Palexeralfs are the very deep Fernandez soils on the top of dissected terraces. These soils have an ochric epipedon, an argillic horizon with 20 to 35 percent clay and 0 to 20 percent gravel, an abrupt texture change to red clay at a depth of 44 inches (112 centimeters), base saturation of less than 75 percent, and a weakly cemented, gravelly duripan. They are believed to represent channels that were refilled with sediment. Vegetation consists of annual grasses and forbs.

A high fan terrace is dominantly associated with the lower member of the Laguna Formation, though the upper member also occurs. Ultic Palexeralfs on this terrace are represented by the very deep Thompsonflat soils. These soils have an ochric epipedon and an argillic horizon with 23 to 34 percent clay and 4 to 34 percent rock fragments and are 22 to 75 inches (56 to 190 centimeters) deep to extremely gravelly layers that have secondary silica. Vegetation consists of annual grasses and blue oak.

Thermic Soils on Sierra Nevada Foothills

Refer to the light yellow, greenish yellow, and gray areas in figure 30 and to general soil map units 14, 19, 20, 21, 23, and 24.

Directly uphill and east of the high fan terraces are the Sierra Nevada foothills consisting of metamorphic rocks that are on the Smartville Complex. This complex, which dates back to 159 million to 164 million years BP (Schiffman and Wagner, 1992), consists mainly of greenschist, gabbro, gabbro diorite, diorite, and some quartz diorite.

Ultic Haploxeralfs, such as the shallow Dunstone and moderately deep Loafercreek soils, occur on the lower portion of the foothills, at elevations of 200 to 2,400 feet (61 to 732 meters). These soils have an ochric epipedon, an argillic horizon with 18 to 33 percent clay and as much as 50 percent silt, 3 to 33 percent rock fragments, base saturation of 60 to 85 percent, and a paralithic contact of greenschist. The soils support two plant communities, one consisting mainly of annual grasses, forbs, and blue oak and the other consisting mainly of shrubs, hardwoods, and foothill pine. Refer to general soil map units 19 and 20.

Above the low metamorphic foothills is a zonal sequence of metamorphic foothills at elevations of 1,200 to 2,000 feet (366 to 610 meters). Representing Ultic Haploxeralfs

in this zone are the deep Mounthope soils, which have an ochric epipedon, an argillic horizon with 20 to 27 percent clay and as much as 50 percent silt, 10 to 35 percent rock fragments, and a paralithic contact of green schist. Ultic Palexeralfs are typified by the very deep Hartsmill soils, which have the same diagnostic horizons as the Mounthope soils but have an argillic horizon with 35 to 50 percent rock fragments and a clay content that does not decrease in the lower part. The Hartsmill soils support dense shrub-hardwood plant communities with scattered ponderosa pine. Refer to the light yellow area in figure 30 and to general soil map unit 21.

The Smartville Complex includes the Swedesflat Pluton, which consists of gabbro, gabbro diorite, diorite, and some quartz diorite. Ultic Haploxeralfs are on this pluton. Examples are the moderately deep Flanly and shallow Swedesflat soils, which have an ochric epipedon, an argillic horizon with 15 to 30 percent clay, 4 to 25 percent rock fragments, base saturation of 40 to 74 percent, and a paralithic contact of quartz diorite. Representing Ultic Palexeralfs are the very deep Parkshill soils. These soils have diagnostic horizons similar to those of the Flanly and Swedesflat soils, but the content of clay does not decrease in the lower part of the argillic horizon. Parkshill soils support annual grass-shrub-hardwood plant communities with scattered foothill pine. Refer to the greenish yellow area in figure 30 and to general soil map unit 23.

Soils on the low portion of the Bald Rock Pluton formed in residuum and colluvium derived from trondhjemite. Examples are Typic Haploxerepts, such as the very deep Crystalhill and moderately deep Oregongulch soils, which have an ochric epipedon, a cambic horizon with 12 to 18 percent clay and 20 to 35 percent rock fragments, and a densic contact of trondhjemite. The densic contact has rock structure and, when observed in road cuts, appears to be a paralithic contact. It is a densic contact, however, because it slakes in water. Representing Ultic Haploxeralfs are the deep Craigsaddle soils, which have an ochric epipedon, an argillic horizon with 18 to 27 percent clay, and a densic contact. The soils on the low portion of the Bald Rock Pluton support dense shrubs, hardwoods, and conifers. Refer to the greenish yellow area in figure 30 and to general soil map unit 24.

Directly north of the fan terraces is Table Mountain, a prominent feature that formed by exposure of Lovejoy basalt (of Miocene age) and that rises like an island above the surrounding area. Table Mountain has unique soils and a landscape that is far different from that of the surrounding area. Water has worked this plateau, eroding hard basalt back from the edges and forming several canyons (hollows). Representing Oxyaquic Haplohumults on this landscape are the moderately deep Elsey soils on mounds. These soils have an umbric epipedon, an argillic horizon with base saturation of less than 7 percent, a lithic contact of basalt, redoximorphic features, and a fluctuating water table. Lithic Haplohumults are typified by the shallow Beatsonhollow soils in swales. These soils have an umbric epipedon, an argillic horizon with base saturation of less than 7 percent, a lithic contact of basalt, redoximorphic features, and a fluctuating water table. Ultic Argixerolls are represented by the deep Campbellhills soils in joint fractures on the top of basalt plateaus. These soils have a mollic epipedon, an argillic horizon, a lithic contact of basalt, and a fluctuating water table that is perched on the lithic contact. The soils on Table Mountain support a diverse plant community of annual grasses and forbs on top of the basalt plateau and annual grasses, forbs, shrubs, hardwoods, and some conifers in canyons. Refer to the gray area northwest of Lake Oroville in figure 30 and to general soil map unit 14.

Directly below the Lovejoy basalt on Table Mountain are sediments of the Ione Formation (of Eocene age). These sediments are associated with auriferous gravel that was hydraulically mined for gold. The Ione sediments consist of sand and clay layers that have weathered to form soils represented by very deep Palexerults, which have an argillic horizon with an average of 26 to 40 percent kaolinitic clay and have a densic contact of claystone. Refer to the gray area northwest of Lake Oroville in figure 30 and to general soil map unit 14.

Mesic Soils on Sierra Nevada Mountains

Refer to the light green, dark green, and pale green areas in figure 30 and to general soil map units 31, 33, 34, and 35.

Soils that formed under optimum conditions favoring deeply developed profiles are at an elevation of 2,200 to 4,375 feet (671 to 1,334 meters). These soils formed in residuum and colluvium derived from metavolcanic rocks, metadiorite, diorite, and gabbro ranging in age from Jurassic to Permian. In this zone, high amounts of precipitation and relatively warm temperatures have developed fairly uniform soil properties despite the type of rock from which the parent material of the soils is derived. Andic Haplohumults, such as the fine textured Toadtown and fine-loamy Powellton soils, have an ochric epipedon, andic material extending to a depth of about 15 inches (38 centimeters), and an argillic horizon with base saturation of 10 to 35 percent. Representing Xeric Kanhaplohumults are the deep Rogerville soils, which formed in residuum and colluvium derived from ultramafic rocks, mainly talc schist. These soils have an ochric epipedon, an argillic horizon with 36 to 50 percent clay and base saturation of 20 to 35 percent, and a paralithic contact of talc schist. They support a highly productive mixed conifer forest. Refer to the light green area in figure 30 and to general soil map unit 31.

A variety of soils have formed in residuum and colluvium on the Bald Rock Cascade, Concow, and Grizzly Plutons, which are Cretaceous, dating back to 128 to 142 million years BP (Hietanen, 1976). Typic Dystroxerepts, such as the very deep Islandbar soils, the shallow, loamy Chawanakee soils, and the very deep Bonneyridge soils, are typical of the soils that formed in granitic parent materials. They have an ochric epipedon, a cambic horizon, and less than 18 percent clay (a coarse-loamy particle-size class). The very deep Featherfalls soils, which show evidence of differential weathering and represent Ultic Palexeralfs, have an ochric epipedon and have an argillic horizon with 20 to 27 percent clay. The content of clay does not decrease in the lower part of the argillic horizon. Andic Haploxerults are represented by the very deep Lewisflat soils, which have an ochric epipedon, an argillic horizon with 18 to 27 percent clay, and base saturation of 9 to 32 percent. Islandbar and Featherfalls soils occur at elevations of 900 to 3,175 feet (274 to 968 meters). Bonneyridge and Lewisflat soils occur at elevations of 3,100 to 4,600 feet (945 to 1,402 meters) and in some areas down to 1,680 feet (512 meters). Refer to the dark green area in figure 30 and to general soil map units 33 and 34.

The Cascade Pluton has Sierra Nevada volcanic lava flows of Lovejoy basalt, which are of Miocene age (22.2 million years BP) and are buried by tephra. The soils on this pluton include Humic Haploxerands, such as the very deep Shakeridge and deep Timberisland soils on ridgetops and side slopes. These soils have a mollic epipedon, andic soil properties extending to a depth of more than 40 inches (102 centimeters), a cambic horizon, and ferrihydritic mineralogy. Base saturation is more than 50 percent because bases are released as basalt fragments weather. Representing Alfic Humic Haploxerands are the very deep Mudwash soils on ridgetops and side slopes. These soils have a thick umbric epipedon, andic soil properties extending to a depth of 26 inches, an argillic horizon, and a paralithic contact of basalt or mudflow. Refer to the pale green area in figure 30 and to general soil map unit 35.

Frigid Soils on Sierra Nevada Mountains

Refer to the olive green and blue green areas in the lower right part of figure 30 and to general soil map units 37 and 38.

Lovejoy basalt flows are underlain by Sierra Nevada volcanic pyroclastic mudflows, which are of Pliocene age, dating back to 2 to 6 million years BP (Hietanen, 1976), and are buried by tephra of unknown origin. The soils on these mountains include Humic Haploxerands, such as the moderately deep, medial-skeletal Powderhouse soils, the moderately deep, medial Greenwell soils, and the deep, medial-skeletal

McNair soils. These soils have an umbric epipedon, andic soil properties extending from the surface through most of the profile, a cambic horizon, and a paralithic contact of mudflow. Base saturation ranges from 10 to 35 percent. The content of organic matter ranges from 4 to 35 percent. It is highest in the A horizon. Refer to the olive green area in figure 30 and to general soil map unit 37.

At the highest elevation in this sequence, soils formed in material derived from Sierra Nevada metamorphic rocks, which are designated as the Franklin Canyon Formation and estimated to be of Devonian age, about 360 to 415 million years BP (Hietanen, 1976). Representing Andic Haplohumults on ridgetops and side slopes are the very deep Dejonah soils, which have an ochric epipedon with andic material to a depth of 10 inches (25 centimeters), an argillic horizon with 18 to 27 percent clay, 5 to 30 percent rock fragments, and base saturation of 10 to 25 percent. The very deep Stagpoint soils generally have the same properties as the Dejonah soils, but the content of rock fragments ranges from 41 to 58 percent. Both soils have 8 to 17 percent organic matter in the upper 10 inches (25 centimeters). This high-elevation area supports conifers dominated by white fir and red fir. Refer to the blue green area in figure 30 and to general soil map unit 38.

References

The following list includes works consulted as well as works cited.

Adams, F. 1984. Soil acidity and liming. American Society of Agronomy, Agronomy Monograph 12, 2nd edition.

Alexander, E.B., W.E. Wildman, and W.C. Lynn. 1985, Ultramafic (serpentinitic) mineralogy class. Mineral classification of soils. Soil Science Society of America Special Publication 16.

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Barbour, M.G., J.H. Burk, and W.D. Pitts. 1987. Terrestrial plant ecology. 2nd edition.

Barbour, M.G., B. Pavlik, F. Drysdale, and S. Lindstrom. 1993. California's changing landscapes: Diversity and conservation of California vegetation. California Native Plant Society, Sacramento, California.

Barbour, M.G., A. Solomeshch, C. Witham, R. Holland, R. MacDonald, S. Cilliers, J.A. Molina, J. Buck, and J. Hillman. 2003. Vernal pool vegetation of California: Variations within pools. Madroño 50(3): 129–146.

Bates, R.L., and J.A. Jackson, eds. 1984. Dictionary of geological terms. The American Geological Institute. 3rd edition.

Birkeland, Peter W. 1974. Pedology, weathering, and geomorphological research.

Birkeland, Peter W. 1984. Soils and geomorphology. 2nd edition.

Black, C.A. 1968. Soil-plant relationships. 2nd edition.

Blodgett, J.C., and P.L. Stiehr. 1974. Hydraulic analysis of floodflow in Butte Basin at State Highway 162, Glenn and Butte Counties, California.

Brady, Nyle C. 1974. The nature and properties of soils. 8th edition.

Buol, S.W., F.D. Hole, and R.J. McCracken. 1980. Soil genesis and classification. 3rd edition.

Busacca, Alan James. 1982. Geological history and soil development, northeastern Sacramento Valley, California. Dissertation, University of California, Davis.

California Department of Fish and Game. 2003. Atlas of biodiversity of California.

California Division of Forestry and Fire Protection. 1974-1981. Soil-vegetation survey maps and reports: Jonesville SW (1981), Pulga NW (1981), Pulga SW (1980), Brush Creek (1980), Berry Creek (1978), Oroville Dam (1979), Forbestown (1979), American House (1980), Cascade (1979), Clipper Mills (1979), Strawberry Valley (1979), Stirling City (1981), Cohasset (1980), Paradise, W (1980), Paradise, S (1979), Campbell Mound (1981), Richardson Springs NW (1980), Richardson Springs (1981), Nord (1980), Chico (1980), Cherokee (1980), Hamlin Canyon (1980), Shippee (1979), Oroville (1979), Palermo (1974), Honcut (1974), Rackerby (1976), Bangor (1976), and Loma Rica (1976).

California Native Plant Society. 2001. Inventory of rare and endangered plants of California. 6th edition.

Coleman, Steven M. 1981. Rock-weathering rates as functions of time. Quaternary Research 15: 250-264.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. United States Fish and Wildlife Service FWS/OBS-79/31.

Cox, Earl. 1999. The fuzzy systems handbook. 2nd edition.

Creely, Robert S. 1965. Geology of the Oroville Quadrangle, California. California Division of Mines and Geology Bulletin 184.

Department of Housing and Urban Development, Federal Insurance Administration. 1977. Flood hazard boundary maps, 1-113.

Dunning, Duncan. 1942. A site classification for the mixed-conifer selection forest of the Sierra Nevada. United States Department of Agriculture, Forest Service. California Forest and Range Experiment Station Research Note 28.

Eriksen, C., and D. Belk. 1999. Fairy shrimps of California's puddles, ponds, and playas.

Eyre, F.H., ed. 1980. Forest cover types of the United States and Canada. Society of American Forestry.

Faber, P., ed. 1997. California's wild gardens. Published by the California Native Plant Society for the California Department of Fish and Game, Sacramento, California.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Forman, R.T.T., and M. Gordon. 1986. Landscape ecology.

Griggs, F.T. 2000. Vina Plains Preserve: Eighteen years of adaptive management. Fremontia 27(4) and 28(1): 48–51.

Hanson, L. 2003 and 2004. Field notes for botany surveys in the Feather River Ranger District, Plumas National Forest. Plumas National Forest, Oroville, California.

Harwood, D.S., E.J. Helly, and M.P. Doukas. 1981. Geologic map of the Chico Monocline and northeastern part of the Sacramento Valley, California. United States Department of the Interior, Geological Survey, MAP I-1238.

Helley, Edward J., and David S. Harwood. 1985. Geologic map of the Late Cenozoic deposits of the Sacramento Valley and Northern Sierran foothills, California. United States Department of the Interior, Geological Survey, Miscellaneous Field Studies Map MF-1790.

Hietanen, Anna. 1976. Metamorphism and plutonism around the Middle and South Forks of the Feather River, California. United States Department of the Interior, Geological Survey Professional Paper 920.

Holland, R.F. 1986. Preliminary descriptions of terrestrial natural communities of California. Natural Heritage Division, California Department of Fish and Game, Sacramento, California.

Holland, R.F., and V.I. Dains. 1990. The edaphic factor in vernal pool vegetation. *In* D.H. Ikeda and R.A. Schlising, eds., Vernal Pool Plants—Their Habitat and Biology. Studies from the Herbarium No. 8, pp. 31–48. California State University, Chico, California.

Hurt, G.W., P.M. Whited, and R.F. Pringle, eds. Version 5.0, 2002. Field indicators of hydric soils in the United States.

Jenny, Hans. 1941. Factors of soil formation.

Jenny, Hans. 1980. The soil resource—origin and behavior. Ecological Studies 37.

Khasawneh, F.E., E.C. Sample, and E.J. Kamprath, eds. 1980. The role of phosphorus in agriculture. American Society of Agronomy.

Lydon, P.A. 1968. Geology and lahars of the Tuscan Formation, northern California. Studies in Volcanology: 441-475.

Lydon, P.A., T.E. Gay, Jr., and C.W. Jennings. 1960. Geologic map of California Westwood Sheet. State of California, Division of Mines and Geology. Olaf P. Jenkins, ed.

Major, J., and M. Barbour, eds. 1988. Terrestrial vegetation of California. 2nd edition. California Native Plant Society, Sacramento, California.

Marty, J. 2005. Effects of cattle grazing on diversity in ephemeral wetlands. Conservation Biology 19: 1626–1632.

Mayer, K.E, and W.F. Laudenslayer, Jr., eds. 1988. A guide to wildlife habitats of California. California Department of Forestry and Fire Protection.

McArdle, R.E., W.H. Meyer, and D. Bruce. 1961. The yield of Douglas-fir in the Pacific Northwest. United States Department of Agriculture Technical Bulletin 201.

Meyer, W.H. 1961. Yield of even-aged stands of ponderosa pine. United States Department of Agriculture Technical Bulletin 630.

Muckel, Gary B., ed. 2004. Understanding soil risks and hazards: Using soil survey to identify areas with risks and hazards to human life and property. United States Department of Agriculture, Natural Resources Conservation Service.

Munson, Robert D., ed. 1985. Potassium in agriculture. American Society of Agronomy.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

O'Geen, A.T., Soil Resource Specialist, Cooperative Extension, Department of Land, Air and Water Resources, University of California. Personal communication.

Oswald, Vernon H. 1994. Manual of the vascular plants of Butte County, California. California Native Plant Society.

Portland Cement Association. 1973. PCA soil primer.

Raveling, D.G. 1979. The annual energy cycle of the cackling Canada goose. *In* R.L. Jarvis and J.C. Bartonek, eds., Management and Biology of Pacific Flyway Geese, pp. 91–93.

Robinson, W.L., and E.G. Bolen. 1989. Wildlife ecology and management. 2nd edition.

Ruhe, Robert V. 1956. Geomorphic surfaces and the nature of soils. Soil Science 82: 441-455.

Saucedo, G.J., and D.L. Wagner. 1992. Geologic map of the Chico Quadrangle. California Department of Conservation, Division of Mines and Geology. Map No. 7A (Geology).

Sawyer, J.O., and T. Keeler–Wolf. 1995. A manual of California vegetation. California Native Plant Society, Sacramento, California.

Schiffman, P., and D.L. Wagner, eds. 1992. Field guide to the geology and metamorphism of the Franciscan Complex and Western Metamorphic Belt of northern California. California Department of Conservation, Division of Mines and Geology, Special Publication 114.

Schoeneberger, P.J., D.A. Wysocki, E.C. Benham, and W.D. Broderson, eds. 2002. Field book for describing and sampling soils. Version 2.0. U.S. Department of Agriculture, Natural Resources Conservation Service.

Silveira, J.G. 1998. Avian uses of vernal pools and implications for conservation practice. *In* C.W. Witham, E.T. Bauder, D. Belk, W.R. Ferren, Jr., and R. Ornduff, eds., Ecology, Conservation, and Management of Vernal Pool Ecosystems—Proceedings From a 1996 Conference, pp. 92–106. California Native Plant Society, Sacramento, California.

Silveira, J.G., F.T. Griggs, D.W. Burkett, K.Y. Buer, D.S. Efseaff, G.H. Golet, S.L. Small, R. Vega, and J.E. Isola. 2003. An ecological approach to restoring riparian habitats at the Llano Seco Unit, Sacramento River National Wildlife Refuge. *In* P.M. Faber, ed., Proceedings of the Riparian Habitat and Floodplains Conference, pp. 239–252. 2001 Riparian Habitats and Floodplains Conference Proceedings, Riparian Habitat Joint Venture, Sacramento, California.

Simonson, Roy W. 1959. Outline of a generalized theory of soil genesis. Soil Science Society of America Proceedings 23: 152-156.

Simpson, R.G. 1978. Flood hydrology of Butte Basin, 1973-77 water years, Sacramento Valley, California. United States Department of the Interior, Geological Survey, Water-Resources Investigations 78-86.

Smith, D.W., and W.L. Verrill. 1998. Vernal pool landforms and soils of the Central Valley, California. *In* C.W. Witham, E.T. Bauder, D. Belk, W.R. Ferren, Jr., and R. Ornduff, eds., Ecology, Conservation, and Management of Vernal Pool Ecosystems—Proceedings From a 1996 Conference, pp. 15–23. California Native Plant Society, Sacramento, California.

Soil Science Society of America. 1997. Glossary of soil science terms.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://soils.usda.gov/technical/

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2003. Keys to soil taxonomy. 9th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Spangler, Slaton, and Dudley. 2000. Sectional geology of Cenozoic deposits of the northern Sacramento Valley, California. Geologic map of Butte County. State of California, Department of Water Resources.

State of California, Department of Water Resources. 1978. Evaluation of ground water resources: Sacramento Valley. Bulletin 118-6.

State of California, Department of Water Resources, Northern District. 1993. Sacramento Valley basin ground water levels, Butte County.

Stevenson, F.J. 1982. Humus chemistry: Genesis, composition, reactions.

Stevenson, F.J., ed. 1982. Nitrogen in agricultural soils. American Society of Agronomy, Agronomy Monograph 22.

Storer, T.I., and R.L. Usinger. 1963. Sierra Nevada natural history—an illustrated handbook.

Storie, R.E. 1933. An index for rating the agricultural value of soils. University of California Agricultural Experiment Station Bulletin 556.

Storie, R.E. 1978. Storie index rating. University of California, Division of Agricultural Science Special Publication 3203.

Taber, R.D., and R.F. Dasmann. 1958. The black-tailed deer of the chaparral—its life history and management in the North Coast Range of California. California Department of Fish and Game, Game Bulletin 8.

Thelander, C.G., ed. 1994. Life on the edge: A guide to California's endangered natural resources—wildlife.

Thornbury, William D. 1969. Principles of geomorphology. 2nd edition.

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Bureau of Chemistry and Soils. 1929. Soil survey of the Chico Area, California.

United States Department of Agriculture, Bureau of Chemistry and Soils. 1930. Soil survey of the Oroville Area, California.

United States Department of Agriculture, Bureau of Soils. 1913. Reconnoissance soil survey of the Sacramento Valley, California.

United States Department of Agriculture, Natural Resources Conservation Service. National engineering handbook. http://public.nrcs.usda.gov/scripts/lpsiis.dll/H/H_210_NEH_Content.htm

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://soils.usda.gov/technical/

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/technical/

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://soils.usda.gov/technical/

United States Department of Agriculture, Natural Resources Conservation Service. PLANTS database. National Plant Data Center. http://plants.usda.gov

United States Department of Agriculture, Natural Resources Conservation Service. 1996. Soil survey laboratory methods manual. Soil Survey Investigations Report 42, Version 3.0. http://soils.usda.gov/technical/

United States Department of Agriculture, Natural Resources Conservation Service. 1999. Soil biology primer.

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. United States Department of Agriculture Handbook 296.

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. United States Department of Agriculture Handbook 210.

United States Department of Agriculture, Soil Conservation Service. 1967. Report for general soil map, Butte County, California.

United States Department of Agriculture, Soil Conservation Service. 1987. Basic statistics, 1982 national resources inventory. Statistical Bulletin 756.

United States Department of the Interior. Geological Survey, Water Resources Division Open-File Report 74-198.

United States Environmental Protection Agency. 2004. PM-10 attainment plan fact sheet. Region 9, San Francisco.

United States Fish and Wildlife Service. 2005. Sacramento River National Wildlife Refuge final comprehensive conservation plan. Final June 2005. Prepared by the California/Nevada Refuge Planning Office, Sacramento, California, and the Sacramento National Wildlife Refuge Complex, Willows, California.

Vepraskas, Michael J. 1992. Redoximorphic features for identifying aquic conditions. North Carolina Agricultural Research Service, North Carolina State University, Raleigh, North Carolina, Technical Bulletin 301.

Walsh, L.M., and J.D. Beaton, eds. 1973. Soil testing and plant analysis. Soil Science Society of America.

Glossary

AASHTO classification. A system for classifying soils specifically for geotechnical engineering purposes that is related to highway and airfield construction. It is based on particle-size distribution and Atterberg limits.

AASHTO group index (GI). An empirical index number used to evaluate clayey and silty clay material.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Allophane. An amorphous clay mineral; a hydrous alumino-silicate gel of highly variable composition.

Alluvial fan. A low, outspread mass of loose material and/or rock material washed down the sides of mountains and hills. It commonly has gentle slopes and is shaped like an open fan or a segment of a cone. It is deposited by a stream at the place where the stream issues from a narrow mountain valley or where a tributary stream is near or at its junction with the main stream. An alluvial fan is steepest near its apex that points upstream, and it slopes gently and convexly outward with a gradual decrease in gradient.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Andesite. A dark, fine grained extrusive rock that, when porphyritic, contains phenocrysts composed primarily of zoned sodic plagioclase (especially andesine) and one or more of the mafic minerals (e.g., biotite, hornblende, and pyroxene), with a ground mass composed generally of the same minerals as the phenocrysts; the extrusive equivalent of diorite.

Andic materials. Soil materials that have properties influenced by the weathering of tephra and volcanic glass but are not diagnostic andic soil properties. Commonly, layers of weathered volcanic ash that are too thin or are not weathered sufficiently to have formed allophane or imogolite.

Andic soil properties. Soil properties resulting from the presence of significant amounts of allophone, imogolite, ferrihydrate, or aluminum-humus complexes in soils. These materials, termed “amorphous,” are commonly formed during the weathering of tephra and other parent materials with a significant content of volcanic glass.

Anthropogenic soils. Soils that have been altered by human activity. Examples are soils that formed in human-transported or human-manufactured materials, soils

that have had all diagnostic horizons destroyed in-situ by one-time or periodic human chemical or mechanical disturbance, soils in excavated areas, and paddy soils and other soils in which ongoing genesis is strongly influenced by nearly continuous human activity.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Ash, volcanic. Unconsolidated pyroclastic material less than 2 millimeters in all dimensions.

Aspect. The direction in which a slope faces.

ASTM standard D2487-00. Refers to a system of classifying mineral and organo-mineral soils for engineering purposes based on laboratory determination of particle-size characteristics, liquid limit, and plastic index. ASTM means American Society for Testing and Materials.

Available water capacity (available moisture capacity). The volume of water that should be available to plants if the soil, inclusive of rock fragments, were at field capacity. It is commonly estimated as the difference between the amount of water at field capacity and the amount at wilting point with adjustments for salinity, rock fragments, and rooting depth. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 2.5
Low	2.5 to 5.0
Moderate	5.0 to 7.5
High	7.5 to 10.0
Very high	more than 10.0

AWC. See Available water capacity.

Backslope. The hillslope profile position that forms the steepest and generally linear, middle portion of the slope. In profile, backslopes commonly are bounded by a convex shoulder above and a concave footslope below. They may or may not include cliff segments, or free faces. Backslopes are commonly erosional forms produced by mass movement, colluvial action, and running water.

Bar (microfeature). A small, sinuous or arcuate, ridgelike lineation separated from others similar to it by small channels. It is caused by fluvial processes and is common on flood plains and young alluvial terraces. It is a constituent of bar-and-channel topography.

Bar (streams). A general term for a ridgelike accumulation of sand, gravel, or other alluvial material in the channel, along the banks, or at the mouth of a stream where a decrease in velocity induces deposition. Examples are channel bars and meander bars.

Bar-and-channel topography. A local topography of recurring, small, sinuous or arcuate ridges separated by shallow troughs irregularly spaced across low-relief flood plains (slopes generally are 2 to 6 percent). The effect is a subdued, sinuously undulating surface that is common on active flood plains. Micro-elevational differences generally range from less than 1 meter to less than 2 meters. The elevational differences between the bars and channels are largely controlled by the competency of the stream. The ridgelike bars commonly consist of sediment that is coarser than the finer textured sediment of the low-lying areas.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Basal till. Compact glacial till deposited beneath the ice.

Basalt. A dark igneous rock, commonly extrusive, composed primarily of calcic plagioclase and pyroxene; the fine grained equivalent of gabbro.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Basin. The nearly level or gently sloping bottom surface of a wide structural depression between mountain ranges.

Batholith. A large body of igneous intrusive (plutonic) rock, commonly regional in extent, such as the Sierra Nevada Batholith.

Beach terrace. A landform that consists of a wave-cut scarp and wave-built terrace of well sorted marine and lacustrine sand and gravel. Colloquially, in the western United States, the relict shoreline from pluvial lakes, generally restricted to the sides of valleys.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. A general term for the solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface. *Densic bedrock* is noncemented, extremely weathered, or soft because of the nature of the rock. *Lithic bedrock* is indurated, very strongly cemented , or strongly cemented. An example is hard bedrock, which impedes the downward movement of water and restricts root penetration. *Paralithic bedrock* is moderately cemented, weakly cemented, very weakly cemented, or extremely weakly cemented. An example is soft bedrock, such as sandstone, mudstone, or strongly weathered bedrock.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench. A platformlike, nearly level or gently sloping erosional surface developed on resistant strata where canyons are downcut by streams. Structural benches are bedrock controlled.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 24 inches (more than 600 millimeters) in diameter.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Breccia. A coarse grained clastic rock composed of angular, broken rock fragments held together by a mineral cement or a fine grained matrix, e.g., volcanic breccia.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Bulk density. A measurement of the oven-dry weight of the soil material that is less than 2 millimeters in diameter per unit volume. Common measurements are taken at $^{1}/_{3}$-, $^{1}/_{10}$-, or 15-bar moisture tension. Bulk density influences plant growth and engineering applications. It is used to convert measurements from a weight basis to a volume basis. Within a family particle-size class, bulk density is an indicator of how well plant roots are able to extend into the soil. Bulk density is used to calculate porosity.

Butte. An isolated, generally flat-topped hill or mountain with relatively steep slopes and talus or precipitous cliffs. It is characterized by a summit width that is less than the height of bounding escarpments, is commonly topped by a cap of resistant rock, and represents an erosional remnant carved from flat-lying rock.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing.

To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Calcic horizon. A mineral soil horizon of secondary carbonate enrichment that is more than 15 centimeters thick, has a calcium carbonate equivalent of more than 15 percent, and has a calcium carbonate equivalent at least 5 percent higher than the underlying horizon.

Calcium carbonate equivalent. The amount of calcium carbonate in a soil measured by treating the soil sample with hydrochloric acid (HCL). The evolved carbon dioxide (CO_2) is measured, and the amount of carbonate is then calculated as calcium carbonate ($CaCO_3$).

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Cambic horizon. A mineral soil horizon that has the texture of loamy very fine sand or finer, has soil structure rather than rock structure, and contains some weatherable minerals. It is characterized by the alteration or removal of mineral material as indicated by mottling or gray color, stronger chroma or redder hue than the underlying horizons, or the removal of carbonates. The cambic horizon lacks cementation or induration and has too few evidences of illuviation to meet the requirements for an argillic horizon.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Canyon. A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence of soils on a landscape that are about the same age and formed in similar kinds of parent material under similar climatic conditions but have different characteristics as a result of differences in relief and drainage.

Cathodic protection. Control of the electrolytic corrosion of an underground or underwater metallic structure, such as a pipeline, by the application of an electrical current in such a way that the structure acts as the cathode rather than the anode of an electrolytic cell. (See Coatings for pipelines.)

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity (CEC). The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Caving potential. The potential for cut banks in shallow excavations to cave in or collapse.

CEC. See Cation-exchange capacity.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Cirque. A semicircular, concave, bowllike area that has steep faces primarily resulting from the erosiveness of a mountain glacier.

Clast. An individual constituent, grain, or fragment of a detrital sediment or sedimentary rock produced by the physical disintegration of a larger rock mass.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Clayey. Includes the texture classes sandy clay, silty clay, and clay.

Claypan. A dense, compact, slowly permeable layer in the subsoil that has a much higher content of clay than the overlying material. A claypan commonly is hard when dry and plastic or sticky when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse fragments. See Rock fragments.

Coarse textured soil. Sand or loamy sand.

Coatings for pipelines. Coatings used as a barrier to the flow of electricity and moisture, thereby preventing the formation of corrosion cells.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (75 to 250 millimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (75 to 250 millimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility percent.

Colluvium. Unconsolidated, unsorted earth material transported or deposited on side slopes and/or at the base of slopes by mass movement, or direct gravitational action, and by local unconcentrated runoff.

Compaction. The process by which the soil grains are rearranged to decrease void space and bring them into closer contact with one another, thereby increasing bulk density.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conglomerate. A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter, commonly with a matrix of sand and finer textured material. Cementing agents include silica, calcium carbonate, and iron oxide. Conglomerate is the consolidated equivalent of gravel.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cryoturbation. A collective term used to describe all soil movement as a result of frost action, including the folding, breaking, and dislocating of beds and lenses of unconsolidated material.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Debris flow (mass movement). The process, associated sediment (debris flow deposit), or resultant landform characterized by a very rapid type of flow dominated by sudden downslope movement of a mass of rock, soil, and mud (more than 50 percent particles that are more than 2 millimeters in size) that behaves much like viscous fluid whether it is saturated or relatively dry.

Deep soil. See Depth, soil.

Densic contact. The contact between soil and dense materials that are relatively unaltered and are not cemented. The dense materials are commonly volcanic mudflow, glacial till, or extremely weathered bedrock.

Depth, soil. Generally, the thickness of the soil over a restrictive layer. Very deep soils are more than 60 inches deep over a restrictive layer; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Distal alluvial fan. The portion of an alluvial fan where relatively fine textured alluvium is deposited farthest from the source area.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A general term for a course or channel along which water moves in draining an area.

Draw. A small stream channel that generally is more open and has a broader floor than a ravine or gulch.

Drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Duripan. A subsurface soil horizon that is cemented with illuvial silica, commonly opal or microcrystalline forms, to the degree that less than 50 percent of the volume of air-dry fragments will slake in water or hydrochloric acid. The duripan impedes the downward movement of water and restricts root growth. Water perches or stacks on the pan, resulting in a high water table.

EC. See Electrical conductivity.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Electrical conductivity (EC). The electrolytic conductivity of an extract from saturated soil paste.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian material. Material transported and deposited by wind, including earth material such as dune sand, sand sheets, loess, and clay.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Epiclastic. Refers to mechanically deposited sediments (gravel, sand, and mud) consisting of the weathered products of older rocks.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A concentration of gravel or coarser fragments that remains on the soil surface after finer particles have been removed by running water or wind.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. The term is most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Extremely stony soil material. Material that has more than 50 percent stones, by volume.

Extrusive. Pertaining to igneous rock and sediment derived from deep-seated molten matter (magma) deposited and cooled on the earth's surface, including lava flows and tephra deposits.

Facies. The aspect, appearance, and characteristics of a rock unit, generally reflecting the conditions of its origin.

Family, soil. The most specific hierarchical category in soil taxonomy.

Fan remnant. A general term for landforms that are the remaining parts of older fan landforms, such as alluvial fans, fan aprons, inset fans, and fan skirts, that either have been dissected (erosional fan remnants) or partially buried (nonburied fan remnants). An erosional fan remnant has a relatively flat summit that is a relict fan surface. A nonburied fan remnant is a relict surface in its entirety.

Fan terrace. See Fan remnant.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

Flood basin. A broad, flat area between a sloping plain and the natural levee of a river; occupied primarily by clayey soils.

Flood plain. The nearly level plain that borders a stream and is subject to inundation under flood-stage conditions unless protected artificially. It is commonly a constructional landform consisting of sediment deposited during overflow and lateral migration of a stream.

Fluvial. Of or pertaining to rivers; produced by river action.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Formation (geologic). A body of rock strata that consists dominantly of a certain lithologic type or combinations of types. Formations may be combined into groups or subdivided into members.

Fragments. Unattached cemented pieces of bedrock, bedrocklike material, durinodes, concretions, and nodules 2 millimeters in diameter or larger in mineral soils; woody material 20 millimeters in diameter or larger in organic soils.

Frigid temperature regime. See Temperature regime, soil.

Frost action, potential.. The potential for frost action is the susceptibility of the soil to upward or lateral movement by the formation of segregated ice lenses. It includes the potential for frost heave and the subsequent loss of soil strength when the ground thaws.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai. The microrelief of soils produced by expansion and contraction with changes in moisture content. It is characteristic of soils containing large amounts of smectitic clay and that swell and shrink considerably with wetting and drying.

Glacial. Of or pertaining to the presence and activity of ice and glaciers, such as glacial erosion; pertaining to distinctive features and material produced by or derived from glaciers and ice sheets, such as glacial lakes; or pertaining to an ice age or region of glaciation.
Glacial drift. See Drift.
Glacial outwash. See Outwash.
Glacial till. See Till.
Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as outwash plains, valley trains, deltas, kames, eskers, and kame terraces.
Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated with varves or rhythmites.
Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.
Granite. A felsic igneous intrusive rock containing quartz and orthoclase with smaller amounts of sodic plagioclase and commonly muscovite.
Granitic. A textural term commonly pertaining to an igneous intrusive rock of felsic to intermediate composition. Referring to granitelike rock, but not necessarily true granite. Commonly applied to granite, quartz monzonite, granodiorite, and diorite.
Granodiorite. An igneous intrusive rock that is intermediate between felsic and mafic in composition and contains quartz and somewhat more plagioclase than orthoclase.
Gravel. Rounded or angular fragments of rock as much as 3 inches (2 to 75 millimeters) in diameter. An individual piece is a pebble.
Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (75 millimeters) in diameter.
Ground water. Water filling all the unblocked pores of the material below the water table.
Gully. A small channel with steep sides cut by the concentrated, but intermittent, flow of water commonly during and immediately following heavy rainfall or following icemelt or snowmelt. A gully generally is an obstacle to wheeled vehicles and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.
Gypsum content. The percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size.
Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.
Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.
Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.
High terrace. The highest position of a steplike fan terrace. It is between an intermediate fan terrace and a foothill.
High water table. See Water table.
Hill. A generic term for an area of the land surface that rises as much as 1,000 feet (300 meters) above surrounding lowlands, commonly has restricted summit area relative to surrounding surfaces, and has a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and commonly is dependent on local usage.

Holocene. The epoch of the Quaternary period of geologic time that extends from the end of the Pleistocene (about 10 to 12 thousand years ago) to the present.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydric soils. Soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include intrusive and extrusive rock. Examples are andesite and basalt.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Index surface runoff. A concept that indicates the relative potential loss of water from an area by flow over the land under specific conditions. It is assumed that the surface of the soil is bare, the steady ponded infiltration rate is the applicable infiltration stage, the soil moisture state is very moist or wet, bulk density is within the limits of the mapping concept, and the standard storm or amount of water addition from snowmelt is 50 millimeters in a 24-hour period with no more than 25 millimeters in any single 1-hour period.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Intermediate terrace. The middle position of a steplike fan terrace. It is between a low fan terrace and high fan terrace.

Intermittent stream. A stream, or reach of a stream, that does not flow year-round (commonly is dry for 3 months or more annually). Its channel generally is below the local water table. The stream flows only when it receives base flow during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Intrusive. Pertaining to igneous rock derived from molten matter (magma) that invaded pre-existing rock and cooled below the surface of the earth.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

K factor. A measurement of potential soil erodibility caused by detachment of soil particles by water.

Kaolinitic. A mineralogy class term used to indicate that the dominant clay mineral is kaolinite. The mineral has a 1:1 layer structure composed of aluminum silicates.

Kf. See Soil erodibility factors.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Ksat. See Saturated hydraulic conductivity.

Kw. See Soil erodibility factors.

Lahar. The process, associated sediments, or resultant landform characterized by a mudflow composed chiefly of volcaniclastic materials on or near the flank of a volcano. The debris carried in the flow includes pyroclastic material, blocks from primary lava flows, and epiclastic material.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Lava flow. A solidified body of rock formed from the lateral, surficial outpouring of molten lava from a vent or fissure; commonly lobate in form.

Leaching. The removal of soluble material from soil or other material by percolating water.

LEP. See Linear extensibility percent.

Linear extensibility percent (LEP). The linear expression of the volume difference between the water content of the natural soil fabric at 1/3-bar or 1/10-bar and oven dryness. The volume change is reported as a percent for the whole soil. Soil composed of 2 to 1: clay, such as smectite, shrinks when dry, forming cracks, and swells when it becomes moist or wet, closing the cracks Shrink-swell potential classes are *low*, LEP of less than 3 and COLE of less than 0.03; *moderate*, LEP of 3 to less than 6 and COLE of 0.03 to less than 0.06; *high*, LEP of 6 to less than 9 and COLE of 0.06 to less than 0.09; and *very high*, LEP of 9 or more and COLE of 0.09 or more.

Liquid limit (LL). The moisture content at which the soil passes from a plastic to a liquid state.

Lithic contact. The boundary between soil and coherent underlying material. When moist, this material is impractical to dig with a spade. It is indurated, very strongly cemented, or strongly cemented and commonly is hard or relatively unweathered bedrock.

Lithologic discontinuity. A significant change in particle-size distribution or mineralogy that indicates differences in lithology within a soil. The term can also denote an age difference. Evidence of lithologic discontinuity includes abrupt texture contacts, contrasting sand sizes, a bedrock lithology that differs from the lithology of rock fragments in the soil, stone lines, distribution of rock fragments, weathering rinds on rock fragments, shape of rocks, soil color, or the presence of micromorphological features.

LL. See Liquid limit.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loamy. Includes the texture classes coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, and silty clay loam.

Low strength. The soil is not strong enough to support loads.

Low terrace. The lowest position of a steplike fan terrace. It is between a basin and an intermediate fan terrace.

Magma. Molten rock material that originates deep in the earth and solidifies to form igneous rock.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Meander belt. The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops. Landform components of the meander-belt surface are produced by a combination of gradual (lateral and down valley) migration of meander loops and avulsive channel shifts causing abrupt cutoffs of loop segments.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mesic temperature regime. See Temperature regime, soil.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement in the earth's crust. Nearly all such rocks are crystalline. Examples are schist, gneiss, quartzite, slate, and marble.

Metamorphism. The mineralogical, chemical, and structural adjustment of solid rocks to physical and chemical conditions imposed at depth below the surface zones of weathering and cementation. These conditions differ from the conditions under which the rocks originated.

Metasediment. A sediment or sedimentary rock that shows evidence of having been subjected to metamorphism.

Metavolcanic rock. A volcanic rock that shows evidence of metamorphism but has not been fully metamorphosed into metamorphic rock.

Mid fan. The portion of an alluvial fan between the proximal and distal portions where relatively medium textured alluvium is deposited.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately deep soil. See Depth, soil.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine (landform). A general term for a landform composed mainly of till deposited by either an active or extinct glacier. Some types are disintegration, end, lateral, recessional, and terminal.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mound-swale microrelief. Circular or oval domes, generally 0.2 foot to 2 feet in height and 1 to 10 feet in diameter, with intervening basin-shaped depressions that commonly do not have external drainage. Also referred to as hogwallow or mima mounds in the western United States.

Mountain. A natural elevation of the land surface that rises more than 1,000 feet (300 meters) above surrounding lowlands, commonly has limited summit area relative to surrounding surfaces, and generally has steep sides (slopes of more than 25 percent) with or without considerable bare-rock surface. A mountain can occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic and/or volcanic activity and by differential erosion.

Muck. Unconsolidated soil material consisting primarily of highly decomposed organic material in which the original plants are not recognizable. It generally contains more mineral material and is darker than peat. (See Sapric soil material.)

Mudflow. The process, associated sediment (mudflow deposit), or resultant landform characterized by a very rapid type of earthflow dominated by a sudden, downslope movement of a saturated mass of rock, soil, and mud (in which more than 50 percent of the particles are less 2 millimeters in size) that behaves much as a viscous fluid.

Mudstone. A blocky or massive, fine grained sedimentary rock indurated by clay and silt in approximately equal amounts. Also, a general term for clay, silt, claystone, siltstone, shale, and argillite that is used only when the amounts of clay and silt are not known or cannot be precisely determined.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natural drainage class. See Drainage class.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)
Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.
Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.
Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.
Ochric epipedon. A dark, thin surface horizon or a light colored surface horizon that fails to meet the criteria for any of the other epipedons.
OM. See Organic matter.
Organic matter. Plant and animal residue in the soil in various stages of decomposition.
Outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.
Outwash plain. An extensive lowland area of coarse textured glaciofluvial material. An outwash plain commonly is smooth; where pitted as a result of the melting of incorporated ice masses, it generally has low relief.
Oxbow. A closely looping stream meander having a curvature so extreme that only a neck of land is left between the two parts of the stream.
Paleosol. A soil that formed in a particular area with distinctive morphological features resulting from a soil-forming environment that no longer exists in the area. The pedogenic process was either altered as a result of external environmental changes or interrupted by burial. A paleosol (or component horizon) is classified as relict if it has persisted without major alteration of morphology by the prevailing pedogenic environment. An exhumed paleosol is one that was buried and has been re-exposed by erosion of the mantle. Most paleosols have been affected by some subsequent modification of the morphology of diagnostic horizons and truncation of the profile.
Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.
Paralithic contact. A contact between soil and relatively unaltered materials that are extremely weakly cemented to moderately cemented. Commonly, these materials are partially weathered or are soft bedrock.
Parent material. The unconsolidated and chemically weathered mineral and organic material in which the solum of a soil is formed as a result of pedogenic processes.
Peat. Unconsolidated soil material consisting largely of undecomposed or slightly decomposed organic matter that has accumulated under excessive moisture conditions. (See Fibric soil material.)
Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.
Pedogenic. Pertaining to processes that add, transfer, transform, or remove soil constituents. Pedology is the scientific study of soils, including their origins, characteristics, and uses.
Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 to 10 square meters), depending on the variability of the soil.
Perched water table. The upper surface of unconfined ground water separated from an underlying main body of ground water by an unsaturated zone.
Percolation. The downward movement of water through the soil.
Permafrost. Soil or rock that has remained at or below 0 degrees C for at least 2 years. It is defined on the basis of temperature and is not necessarily frozen.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to less than 0.06 inch
Slow	0.06 to less than 0.2 inch
Moderately slow	0.2 to less than 0.6 inch
Moderate	0.6 inch to less than 2.0 inches
Moderately rapid	2.0 to less than 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

In micrometers per second (um/sec), the measurements are as follows:

Impermeable	less than 0.01 um/sec
Very slow	0.01 to less than 0.42 um/sec
Slow	0.42 to less than 1.4 um/sec
Moderately slow	1.4 to less than 4.2 um/sec
Moderate	4.2 to less than 14.1 um/sec
Moderately rapid	14.1 to less than 42.3 um/sec
Rapid	42.3 to 141 um/sec
Very rapid	more than 141 um/sec

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

PI. See Plasticity index.

Piedmont (noun). An area, plain, slope, glacier, or other feature at the base of a mountain; for example, a foothill or bajada. In the United States, the Piedmont is a low plateau that extends from New Jersey to Alabama and lies east of the Appalachian Mountains.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index (PI). The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau. A comparatively flat area of great extent and elevation. Specifically, an extensive land region considerably elevated (more than 100 meters) above adjacent lower lying terrain that is commonly limited on at least one side by an abrupt descent and has a flat or nearly level surface. A relatively large part of a plateau surface is near summit level.

Pleistocene. The epoch of the Quaternary period of geologic time following the Pliocene and preceding the Holocene (approximately 2 million to 10 thousand years ago). Also refers to the corresponding (time-stratigraphic) "series" of earth material.

Pluton. A deep-seated igneous intrusion.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). The depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Proximal alluvial fan. The portion of an alluvial fan where relatively coarse textured alluvium is deposited closest to the source area.

Pyroclastic. Pertaining to fragmental material produced by commonly explosive aerial ejection of clastic particles from a volcanic vent. Such material may accumulate on land or under water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reach (stream). A length of a stream used as a unit of study. It has a specified feature that is fairly uniform throughout, such as hydraulic characteristics or flood damage. Reaches are physically defined at each end by cross sections that include the channel and the flood plain. The upstream end is called the head, and the downstream end is called the foot.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. All unconsolidated earth material above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits. Soil scientists regard as soil only that part of the regolith that has been modified by organisms and soil-forming processes. Most engineers describe the entire regolith, even to a great depth, as "soil."

Relief. The elevations or inequalities of a land surface, considered collectively.

Remnant. The remaining part of a larger landform or land surface that has been dissected or partially buried.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Restrictive feature. A nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly restrict the movement of water and air through the soil or that otherwise provide an unfavorable root environment. Common forms include cemented layers, dense layers, abrupt or stratified layers, and strongly contrasting textures. Examples are a duripan, lithic bedrock, and paralithic bedrock.

Rhyolite. Extrusive igneous rock, generally porphyritic and exhibiting flow texture, with phenocrysts of quartz and alkali feldspar in a glassy cryptocrystalline ground mass. The extrusive equivalent of granite.

Rill. A small, steep-sided channel resulting from erosion. It is cut by a concentrated, but intermittent, flow of water, usually during and immediately following moderate rains or following icemelt or snowmelt. Generally, a rill is not an obstacle to wheeled vehicles and is shallow enough to be obliterated by ordinary tillage.

Riverwash. Barren alluvial areas of unstabilized sand, silt, clay, or gravel reworked frequently by stream activity.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop. Exposures of bedrock, excluding lava and rock-lined pits.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs the growth of plants. A saline soil does not contain excess exchangeable sodium. Salinity is

expressed as the electrical conductivity of a saturation extract at 25 degrees C. Salinity classes, expressed in millimhos per centimeter, are as follows:

Nonsaline	0 to 2
Very slightly saline	2 to 4
Slightly saline	4 to 8
Moderately saline	8 to 16
Strongly saline	more than 16

Saline-sodic soil. A soil that contains sufficient exchangeable sodium to interfere with the growth of most crops and appreciable quantities of soluble salts. The exchangeable sodium ratio is greater than 0.15; the conductivity of the soil solution, when saturated, is greater than 4 decisiemens per meter (at 25 degrees C); and the pH is commonly 8.5 or less when the soil is saturated.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sandy. Includes the texture classes sand and loamy sand.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Soft, friable, isovolumetrically weathered bedrock that retains the fabric and structure of the parent rock and exhibits extensive intercrystal and intracrystal weathering. In pedology, the term “saprolite” has been used to refer to any unconsolidated residual material that underlies the soil and grades to hard bedrock below.

SAR. See Sodium adsorption ratio.

Saturated hydraulic conductivity (Ksat). The ease with which pores in a saturated soil transmit water. Ksat classes, expressed in terms of micrometers per second (um/sec), are as follows:

Very low	less than 0.01
Low	0.01 to less than 0.1
Moderately low	0.1 to less than 1
Moderately high	1 to less than 10
High	10 to 100
Very high	more than 100

In inches per hour, the measurements are as follows:

Very low	less than 0.001417
Low	0.001417 to less than 0.01417
Moderately low	0.01417 to less than 0.1417
Moderately high	0.1417 to less than 1.417
High	1.417 to 14.17
Very high	more than 14.17

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic matter accumulated at or near the surface of the earth under “normal”

low temperature and pressure conditions. Sedimentary rock includes the consolidated equivalents of alluvial, colluvial, drift, eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock that formed as a result of the induration of a clay, silty clay, or silty clay loam deposit and has the tendency to split into thin layers (fissility).

Shallow soil. See Depth, soil.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shrink-swell potential. See Linear extensibility percent.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Level	0 to 1 percent
Nearly level	0 to 2 percent
Gently sloping	2 to 5 percent
Moderately sloping	5 to 8 percent
Strongly sloping	8 to 15 percent
Moderately steep	15 to 30 percent
Steep	30 to 50 percent
Very steep	more than 50 percent

Classes for complex slopes are as follows:

Level	0 to 1 percent
Nearly level	0 to 2 percent
Undulating	2 to 5 percent
Gently rolling	5 to 8 percent
Rolling	8 to 15 percent
Hilly	15 to 30 percent
Steep	30 to 50 percent
Very steep	more than 50 percent

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^{+} to $Ca^{++} + Mg^{++}$. The degrees of sodicity and their respective ratios are:

Nonsodic	0-5:1
Very slightly sodic	5-13:1
Slightly sodic	13-30:1
Moderately sodic	30-45:1
Strongly sodic	45-90:1
Very strongly sodic	more than 90:1

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil erodibility factors. The Kw and Kf factors quantify the susceptibility of soil to detachment by water. These erodibility factors predict the long-term average soil loss that results from sheet and rill erosion when various cropping systems and conservation techniques are used. The whole soil is considered in the Kw factor, but only the fine-earth fraction, which is the material less than 2 millimeters in diameter, is considered in the Kf factor.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of

the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A sheetlike lag concentration of rock fragments in surficial sediment. In cross section, the line may be marked only by scattered fragments or it may be a discrete layer of fragments. The fragments are more commonly pebbles or cobbles than stones. A stone line generally overlies material that was subject to weathering, soil formation, and erosion before deposition of the overlying material. Many stone lines appear to be buried erosion pavement originally formed by running water on the land surface and concurrently covered by surficial sediment.

Stones. Rock fragments 10 to 24 inches (250 to 600 millimeters) in diameter if rounded.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stony soil material. Material that has 15 to 35 percent stones, by volume.

Strath terrace. A stream terrace that formed as an erosional surface cut on bedrock and that is thinly mantled with stream deposits (alluvium).

Stratified. Referring to geologic deposits that were formed, arranged, or laid down in layers. Layers in soils that are a result of the processes of soil formation are called horizons; those inherited from the parent material are called strata.

Stream terrace. One of a series of platforms in a stream valley that flanks and is more or less parallel to the stream channel, originally formed near the level of the stream, and represents the dissected remnants of an abandoned flood plain, streambed, or valley floor produced during an earlier period of erosion or deposition.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface runoff. See Index surface runoff.

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

T factor. The soil loss tolerance, which is defined as the maximum amount of erosion at which the quality of a soil as a medium for plant growth can be maintained. Maintaining the quality of the soil includes maintaining the surface soil as a seedbed for plants, maintaining the atmosphere-soil interface to allow the entry of air and water into the soil and still protect the underlying soil from wind and water erosion, and maintaining the total soil volume as a reservoir for water and plant nutrients, which is preserved by minimizing soil loss.

Talus. Rock fragments of any size or shape (commonly coarse and angular) at the base of a cliff or very steep rock slope; the accumulated mass of such loose, broken rock formed mainly by falling, rolling, or sliding.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are

designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Temperature regime, soil. A system that categorizes for taxonomic purposes general, long-term soil temperature conditions at the standard depth of 20 inches or at the surface of the bedrock, whichever is shallower. The various regimes are defined according to the freezing point of water or to the high and low extremes for significant biological activity. The regimes, which are defined in "Keys to Soil Taxonomy," are as follows:

Pergellic.—Soils that have a mean annual temperature of less than 32 degrees F and have permafrost.

Cryic.—Soils that have a mean annual temperature of 32 to 47 degrees F and remain cold in summer.

Frigid.—Soils that have a mean annual temperature similar to that of the cryic regime but have a mean summer temperature at least 9 degrees warmer.

Mesic.—Soils that have a mean annual temperature of 47 to 59 degrees F, and the difference between the mean summer and mean winter temperature is more than 9 degrees.

Thermic.—Soils that have a mean annual temperature of 59 to 72 degrees F, and the difference between the mean summer and mean winter temperature is more than 9 degrees.

Hyperthermic.—Soils that have a mean annual temperature of more than 72 degrees F, and the difference between the mean summer and mean winter temperature is more than 9 degrees.

Tephra. A collective term for any and all clastic materials, regardless of size or composition, ejected from a vent during a volcanic eruption and transported through the air. Includes volcanic ash (less than 2 millimeters in size), volcanic blocks (more than 64 millimeters in size), volcanic cinders (more than 2 millimeters in size), lapilli (a size of 2 to 76 millimeters and specific gravity of more than 2.0), pumice (a size of more than 2 millimeters and specific gravity of less than 1.0), and scoria (a size of more than 2 millimeters and specific gravity of less than 2.0).

Terminal moraine. An end moraine that marks the farthest advance of a glacier and commonly has the form of a massive arcuate or concentric ridge, or complex of ridges, underlain by till and other types of drift.

Terrace (geomorphologic). A steplike surface bordering a valley floor or shoreline that represents the former position of a flood plain, lake, or seashore. The term is commonly applied to both the relatively flat summit surface (tread) that has been cut or built up by stream or wave action and the steeper descending slope (scarp or riser) that grades to a lower base level of erosion. Practically, terraces are considered to be generally flat alluvial areas above the 100-year flood stage.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thermic temperature regime. See Temperature regime, soil.

Till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, gravel, cobbles, stones, and boulders transported and deposited by glacial ice.

Toeslope. The outermost inclined surface at the base of a hill; part of a footslope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tuff. A generic term for any consolidated or cemented deposit that is 50 percent volcanic ash (less than 2 millimeters in size). Various types of tuff can be recognized by their composition; acidic tuff is dominantly acidic particles and basic tuff is dominantly basic particles.

Ultramafic rock. An igneous rock composed chiefly of dark mafic (ferromagnesian) minerals. Common forms include rocks with a high content of magnesium and iron, such as talc-schist, serpentinite, peridotite, and various partially serpentinized rocks.

Umbric epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has base saturation of less than 50 percent and pedogenic soil structure. It may include the upper part of the subsoil.

Unified soil classification. A system for classifying mineral and organic soils for engineering purposes based on particle-size characteristics, liquid limit, and plasticity index.

Upland (geomorphologic). A general term for the higher land of a region in contrast to the low-lying, adjacent land, such as a valley or plain; land at a higher elevation than the flood plain or low stream terrace; or land above the footslope zone of the hillslope continuum.

Valley. An elongated, relatively large, externally drained depression that formed primarily through stream erosion or glacial activity.

Valley fill. The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) that fills or partly fills a valley.

Vegetative cover. The crown cover of all live plants in relation to the ground surface.

Vernal pool. A shallow surficial depression that is temporarily filled with water during periods of rain in winter and spring and is desiccated during the dry summer months. It occurs as a small poorly drained depression. Water perches above an impermeable or very slowly permeable soil horizon, a duripan, or bedrock.

Very deep soil. See Depth, soil.

Very shallow soil. See Depth, soil.

Very stony soil material. Material that has 35 to 50 percent stones, by volume.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Water table. The upper surface of ground water or the level below which the soil is saturated by water. Also, the top of an aquifer.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

WEG. See Wind erodibility group.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Wind erodibility group (WEG). A group of soils that have similar properties affecting their resistance to wind erosion in cultivated areas.

Windthrow. The uprooting and tipping over of trees by the wind.

Xeric moisture regime. The typical moisture regime in areas of Mediterranean climates, where it is moist and cool in winter and warm and dry in summer. When potential evapotranspiration is at a minimum, the moisture, which falls in winter, is particularly effective in leaching. The mean annual soil temperature is less than 22 degrees C, and the difference between the mean summer and mean winter soil temperature is 6 degrees.

Xerophytic. Pertaining to vegetation that is adapted to dry areas.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971-2000 at Chico Experimental Station; Strawberry Valley; Oroville; De Sabla; and Paradise, California)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
CHICO:											
January----	54.5	35.2	44.9	71	21	13	5.05	1.70	7.93	7	0.1
February---	60.6	38.8	49.7	77	25	56	4.59	1.17	7.97	6	.0
March------	65.2	41.4	53.3	81	28	130	4.29	1.45	6.74	7	.0
April------	72.3	44.8	58.6	90	31	256	1.59	.33	3.10	3	.0
May--------	80.3	51.2	65.8	100	37	480	.92	.02	1.61	2	.0
June-------	88.7	57.1	72.9	106	43	670	.48	.00	.83	1	.0
July-------	93.9	60.6	77.3	109	49	801	.05	.00	.00	0	.0
August-----	93.1	58.6	75.9	108	48	781	.16	.00	.16	0	.0
September--	89.1	54.7	71.9	106	42	643	.58	.00	1.01	1	.0
October----	78.8	47.2	63.0	98	33	372	1.34	.27	2.36	2	.0
November---	63.7	39.8	51.8	81	25	98	3.01	.81	4.82	5	.0
December---	55.3	34.7	45.0	70	21	14	3.62	1.30	6.00	5	.1
Yearly:											
Average---	74.6	47.0	60.8	---	---	---	---	---	---	---	---
Extreme---	117	13	---	111	19	---	---	---	---	---	---
Total-----	---	---	---	---	---	4,315	25.69	15.70	31.46	39	0.2
STRAWBERRY VALLEY:											
January----	49.5	29.5	39.5	70	15	3	14.82	4.97	23.90	11	19.5
February---	50.4	30.2	40.3	72	17	7	13.87	4.41	22.72	10	22.0
March------	53.2	31.7	42.5	72	18	12	12.97	4.87	19.48	11	23.8
April------	59.3	34.5	46.9	79	22	50	5.76	2.22	8.54	7	9.1
May--------	67.4	40.3	53.8	88	27	169	3.31	.62	6.02	4	.7
June-------	75.7	46.5	61.1	93	32	338	1.02	.11	1.69	2	.0
July-------	82.7	50.8	66.8	96	39	518	.28	.00	.23	0	.0
August-----	82.7	50.1	66.4	97	39	507	.32	.00	.44	0	.0
September--	77.9	46.7	62.3	94	35	371	1.64	.00	3.23	2	.0
October----	68.3	40.5	54.4	88	27	182	4.41	.88	7.97	4	.2
November---	54.7	33.2	44.0	76	20	25	10.42	3.37	15.89	8	5.2
December---	49.8	29.6	39.7	69	14	5	12.16	3.90	19.33	9	16.0
Yearly:											
Average---	64.3	38.6	51.5	---	---	---	---	---	---	---	---
Extreme---	102	4	---	98	10	---	---	---	---	---	---
Total-----	---	---	---	---	---	2,187	80.98	55.67	103.73	68	96.6

See footnote at end of table.

Table 1.--Temperature and Precipitation--Continued

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
OROVILLE:											
January----	55.4	36.7	46.1	70	25	18	5.49	1.71	8.49	7	0.0
February---	61.1	40.1	50.6	77	27	63	5.31	1.39	9.22	8	.0
March------	65.6	43.9	54.7	81	31	167	5.15	1.93	7.80	8	.0
April------	72.3	45.9	59.1	91	34	276	1.77	.39	3.29	3	.0
May--------	81.0	52.3	66.6	101	38	512	1.11	.09	1.89	2	.0
June-------	89.6	57.3	73.4	107	43	682	.40	.00	.66	1	.0
July-------	95.4	61.5	78.5	110	51	880	.08	.00	.02	0	.0
August-----	94.3	58.8	76.6	108	47	810	.17	.00	.17	0	.0
September--	88.1	54.0	71.1	104	43	631	.55	.00	.77	1	.0
October----	78.8	48.5	63.7	96	36	417	1.54	.66	2.43	2	.0
November---	64.1	41.3	52.7	81	29	111	3.80	.94	6.19	6	.0
December---	55.0	36.7	45.8	70	23	19	4.45	1.61	7.28	7	.0
Yearly:											
Average---	75.1	48.1	61.6	---	---	---	---	---	---	---	---
Extreme---	115	12	---	110	22	---	---	---	---	---	---
Total-----	---	---	---	---	---	4,586	29.83	16.31	38.06	45	0.0
DE SABLA:											
January----	52.1	31.8	41.9	71	9	7	12.17	4.22	19.49	10	5.0
February---	54.7	33.5	44.1	73	20	18	11.54	3.56	19.09	9	1.4
March------	58.1	35.0	46.6	76	23	39	10.42	4.05	15.53	10	4.1
April------	64.7	38.3	51.5	83	26	113	4.63	1.81	7.20	6	1.0
May--------	73.1	44.0	58.6	92	30	275	2.46	.40	4.05	3	.0
June-------	82.2	50.3	66.3	99	36	488	.91	.13	1.55	1	.0
July-------	89.0	54.6	71.8	102	42	665	.15	.00	.12	0	.0
August-----	88.8	53.4	71.1	103	41	650	.32	.00	.38	0	.0
September--	83.3	49.7	66.5	99	35	484	1.51	.00	2.91	1	.0
October----	72.8	43.2	58.0	92	27	269	3.28	.60	5.97	3	.0
November---	57.6	35.4	46.5	77	22	38	8.48	2.29	13.55	7	.4
December---	51.6	31.6	41.6	69	16	5	10.66	3.57	16.74	9	2.0
Yearly:											
Average---	69.0	41.8	55.4	---	---	---	---	---	---	---	---
Extreme---	109	5	---	105	13	---	---	---	---	---	---
Total-----	---	---	---	---	---	3,051	66.52	44.96	84.97	59	13.9

See footnote at end of table.

Table 1.--Temperature and Precipitation--Continued

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
PARADISE:											
January----	53.8	38.3	46.0	72	26	28	10.53	3.46	17.09	9	1.2
February---	56.4	40.6	48.5	76	28	52	9.60	3.05	15.99	9	.5
March------	59.9	42.6	51.2	78	30	105	9.33	3.46	14.19	9	.5
April------	66.5	46.4	56.5	86	32	221	3.86	1.45	6.16	5	.0
May--------	75.2	52.2	63.7	95	38	428	1.94	.16	3.23	3	.0
June-------	84.4	59.1	71.7	102	44	651	.71	.05	1.21	1	.0
July-------	91.2	64.4	77.8	105	51	858	.12	.00	.08	0	.0
August-----	90.2	63.4	76.8	107	50	827	.26	.00	.33	0	.0
September--	84.7	59.9	72.3	101	46	668	1.12	.00	2.18	1	.0
October----	73.8	52.6	63.2	93	38	412	3.00	.54	5.52	3	.0
November---	59.7	43.2	51.4	78	30	104	7.43	1.85	12.72	7	.0
December---	53.6	38.2	45.9	71	25	26	8.22	3.01	12.72	8	.5
Yearly:											
Average---	70.8	50.1	60.4	---	---	---	---	---	---	---	---
Extreme---	113	14	---	108	23	---	---	---	---	---	---
Total-----	---	---	---	---	---	4,381	56.11	37.87	71.59	55	2.8

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at Chico Experimental Station; Strawberry Valley; Oroville; De Sabla; and Paradise, California. Absence of an entry indicates that data are not available)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
CHICO:			
Last freezing temperature in spring:			
1 year in 10 later than--	Feb. 5	Mar. 16	Apr. 28
2 years in 10 later than--	Jan. 20	Mar. 3	Apr. 15
5 years in 10 later than--	Dec. 6	Feb. 7	Mar. 23
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 29	Nov. 5	Oct. 27
2 years in 10 earlier than--	Dec. 12	Nov. 17	Nov. 2
5 years in 10 earlier than--	Jan. 13	Dec. 8	Nov. 13
STRAWBERRY VALLEY:			
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 27	May 14	June 8
2 years in 10 later than--	Apr. 15	May 7	June 1
5 years in 10 later than--	Mar. 23	Apr. 22	May 18
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 3	Oct. 17	Sept. 28
2 years in 10 earlier than--	Nov. 12	Oct. 24	Oct. 5
5 years in 10 earlier than--	Nov. 30	Nov. 7	Oct. 20

Table 2.--Freeze Dates in Spring and Fall--Continued

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
OROVILLE:			
Last freezing temperature in spring:			
1 year in 10 later than--	Jan. 4	Feb. 14	Mar. 29
2 years in 10 later than--	---	Feb. 4	Mar. 16
5 years in 10 later than--	---	Jan. 8	Feb. 19
First freezing temperature in fall:			
1 year in 10 earlier than--	Dec. 19	Nov. 27	Oct. 24
2 years in 10 earlier than--	Jan. 7	Dec. 7	Nov. 5
5 years in 10 earlier than--	---	Dec. 31	Nov. 27
DE SABLA:			
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 3	May 2	May 25
2 years in 10 later than--	Mar. 17	Apr. 23	May 16
5 years in 10 later than--	Feb. 13	Apr. 5	Apr. 30
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 27	Oct. 21	Oct. 4
2 years in 10 earlier than--	Nov. 11	Oct. 30	Oct. 12
5 years in 10 earlier than--	Dec. 12	Nov. 15	Oct. 29

Table 2.--Freeze Dates in Spring and Fall--Continued

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
PARADISE:			
Last freezing temperature in spring:			
1 year in 10 later than--	Jan. 18	Feb. 18	Apr. 16
2 years in 10 later than--	Dec. 29	Feb. 5	Apr. 2
5 years in 10 later than--	---	Jan. 6	Mar. 6
First freezing temperature in fall:			
1 year in 10 earlier than--	Dec. 29	Dec. 3	Nov. 8
2 years in 10 earlier than--	Jan. 23	Dec. 16	Nov. 17
5 years in 10 earlier than--	---	Jan. 14	Dec. 3

Table 3.--Growing Season

(Recorded in the period 1971-2000 at Chico Experimental Station; Strawberry Valley; Oroville; De Sabla; and Paradise, California)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
CHICO:			
9 years in 10	306	250	195
8 years in 10	341	269	208
5 years in 10	>365	303	231
2 years in 10	>365	338	255
1 year in 10	>365	356	267
STRAWBERRY VALLEY:			
9 years in 10	206	169	121
8 years in 10	222	179	133
5 years in 10	252	199	155
2 years in 10	283	219	178
1 year in 10	299	230	189
OROVILLE:			
9 years in 10	>365	312	231
8 years in 10	>365	331	250
5 years in 10	>365	>365	288
2 years in 10	>365	>365	326
1 year in 10	>365	>365	346

Table 3.--Growing Season--Continued

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
DE SABLA:			
9 years in 10	225	181	143
8 years in 10	252	195	156
5 years in 10	310	222	182
2 years in 10	>365	250	207
1 year in 10	>365	264	221
PARADISE:			
9 years in 10	>365	306	227
8 years in 10	>365	326	242
5 years in 10	>365	>365	272
2 years in 10	>365	>365	301
1 year in 10	>365	>365	316

Table 4.--Acreage and Proportionate Extent of the Soils

(Some map units from adjacent survey areas have been added to the soil legend for this survey area so that the mapping joins across survey area boundaries. Letters have been added at the end of the map symbols for these map units. The letters "co" refer to Colusa County, the letters "su" refer to Sutter County, and the letters "yu" refer to Yuba County)

Map symbol	Map unit name	Acres	Percent
100	Anita-Galt complex, 0 to 3 percent slopes	434	*
104	Bosquejo clay, 0 to 1 percent slopes	8,624	0.9
105	Busacca clay loam, 0 to 1 percent slopes	5,831	0.6
108	Tuscan-Igo-Anita complex, 0 to 3 percent slopes	1,058	0.1
109	Bosquejo clay loam, 0 to 1 percent slopes	789	*
110	Bosquejo silt loam, 0 to 1 percent slopes, overwash, occasionally flooded	213	*
111yu	Auburn-Sobrante complex, 8 to 15 percent slopes	158	*
114yu	Auburn-Sobrante complex, gravelly, 8 to 15 percent slopes	205	*
118	Xerorthents, tailings, 0 to 50 percent slopes	10,192	1.1
118co	Clear Lake clay, 0 to 2 percent slopes, frequently flooded	771	*
119	Xerorthents, tailings-Urban land complex, 0 to 2 percent slopes	1,905	0.2
119yu	Auburn-Sobrante-Rock outcrop complex, 30 to 50 percent slopes	58	*
120	Gridley taxadjunct clay loam, 0 to 2 percent slopes	4,125	0.4
121	Boga-Loemstone complex, 0 to 1 percent slopes	9,577	1.0
121su	Columbia fine sandy loam, 0 to 2 percent slopes, frequently flooded	164	*
125	Gridley taxadjunct-Calcic Haploxerolls complex, 0 to 2 percent slopes	2,594	0.3
126	Liveoak sandy loam, 0 to 2 percent slopes	2,186	0.2
127	Gridley taxadjunct loam, 0 to 2 percent slopes	10,245	1.1
130	Eastbiggs loam, 0 to 2 percent slopes	10,500	1.1
133	Eastbiggs-Galt complex, 0 to 3 percent slopes	2,085	0.2
136	Duric Xerarents-Eastbiggs complex, 0 to 1 percent slopes, leveled	6,371	0.7
138su	Liveoak sandy clay loam, 0 to 2 percent slopes	3,581	0.4
139su	Liveoak-Galt taxadjuncts complex, 0 to 2 percent slopes, frequently flooded	1,260	0.1
143su	Marcum-Gridley clay loams, 0 to 1 percent slopes	194	*
149yu	Flanly sandy loam, 8 to 15 percent slopes	7	*
150	Columbia, 0 to 2 percent slopes, frequently flooded	1,026	0.1
150su	Olashes sandy loam, 0 to 2 percent slopes	184	*
151yu	Flanly sandy loam, 30 to 50 percent slopes	161	*
152	Gianella fine sandy loam, 0 to 1 percent slopes, frequently flooded	1,514	0.2
153	Gianella sandy loam, 0 to 1 percent slopes, frequently flooded	694	*
154	Gianella silt loam, 0 to 1 percent slopes, frequently flooded	2,209	0.2
158	Gianella fine sandy loam, 0 to 1 percent slopes, occasionally flooded	9,554	1.0
160	Gianella loam, 0 to 1 percent slopes, occasionally flooded	991	0.1
161	Gianella fine sandy loam, 0 to 1 percent slopes, rarely flooded	3,152	0.3
162	Gianella loam, 0 to 1 percent slopes, rarely flooded	774	*
163yu	Holillipah loamy sand, 0 to 1 percent slopes, frequently flooded	92	*
165yu	Holland-Hoda-Hotaw complex, 2 to 30 percent slopes	42	*
173yu	Hotaw-Chawanakee-Holland complex, 8 to 30 percent slopes	3	*
175	Farwell clay loam, 0 to 1 percent slopes	1,639	0.2
176	Farwell loam, 0 to 1 percent slopes, occasionally flooded	930	0.1
176yu	Jocal loam, 8 to 15 percent slopes	41	*
177	Farwell silt loam, 0 to 1 percent slopes, occasionally flooded	1,215	0.1
178	Arbuckle gravelly loam, 0 to 2 percent slopes	167	*
179	Moda taxadjunct-Arbuckle complex, 0 to 2 percent slopes	601	*
180	Dodgeland silty clay loam, 0 to 5 percent slopes, occasionally flooded	1,515	0.2
181	Dodgeland silty clay loam, 0 to 1 percent slopes, frequently flooded	1,420	0.2
188yu	Mariposa taxadjunct gravelly loam, 15 to 30 percent slopes	15	*
189	Esquon silt loam, 0 to 1 percent slopes, overwash	1,015	0.1
189yu	Mariposa taxadjunct gravelly loam, 30 to 50 percent slopes	1	*
196yu	Mildred cobbly loam, 30 to 50 percent slopes	13	*
200	Parrott silt loam, 0 to 2 percent slopes, occasionally flooded	11,784	1.3
201	Parrott silt loam, 0 to 2 percent slopes, frequently flooded	1,237	0.1
203	Kusalslough silty clay loam, 0 to 1 percent slopes, occasionally flooded	685	*
205	Parrott-Vermet complex, 0 to 2 percent slopes, frequently flooded	1,691	0.2
206	Islandbar-Chawanakee complex, 3 to 15 percent slopes	2,190	0.2
207	Islandbar-Chawanakee complex, 15 to 30 percent slopes	2,421	0.3

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Map unit name	Acres	Percent
208	Islandbar-Chawanakee complex, 30 to 50 percent slopes	815	*
209	Islandbar-Chawanakee complex, 50 to 70 percent slopes	39	*
210	Featherfalls-Islandbar complex, 2 to 15 percent slopes	2,291	0.2
211	Featherfalls-Islandbar complex, 15 to 30 percent slopes	3,792	0.4
212	Featherfalls-Islandbar complex, 30 to 50 percent slopes	3,922	0.4
213	Featherfalls-Islandbar complex, 50 to 70 percent slopes	1,741	0.2
214	Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 2 to 15 percent slopes	1,958	0.2
215	Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 15 to 30 percent slopes	4,227	0.5
216	Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 30 to 50 percent slopes	7,078	0.8
217	Crystalhill-Oregongulch-Craigsaddle-Rock outcrop complex, 50 to 70 percent slopes	2,564	0.3
218	Rock outcrop-Lithic Xerorthents-Chawanakee complex, 12 to 50 percent slopes	976	0.1
219	Rock outcrop-Lithic Xerorthents-Chawanakee complex, 50 to 70 percent slopes	206	*
220	Esquon-Clear Lake complex, 0 to 1 percent slopes, frequently flooded	903	*
221yu	Sites loam, 3 to 8 percent slopes	382	*
222yu	Sites loam, 8 to 15 percent slopes	234	*
225yu	Sites gravelly loam, bedrock substratum, 3 to 8 percent slopes	24	*
226yu	Sites gravelly loam, bedrock substratum, 8 to 15 percent slopes	4	*
227yu	Sites gravelly loam, bedrock substratum, 15 to 30 percent slopes	15	*
242yu	Surnuf gravelly loam, 8 to 15 percent slopes	1,140	0.1
243yu	Surnuf gravelly loam, 15 to 30 percent slopes	1,574	0.2
244yu	Surnuf gravelly loam, 30 to 50 percent slopes	397	*
245	Surnuf gravelly loam, 50 to 70 percent slopes	305	*
248yu	Trainer loam, 0 to 1 percent slopes, occasionally flooded	768	*
250	Llanoseco silty clay loam, 0 to 2 percent slopes, occasionally flooded	307	*
252	Whitecabin-Ordferry silty clays, 0 to 1 percent slopes, occasionally flooded	2,595	0.3
252yu	Woodleaf gravelly loam, 3 to 15 percent slopes	9	*
253yu	Woodleaf gravelly loam, 15 to 30 percent slopes	15	*
255	Whitecabin-Ordferry complex, 0 to 1 percent slopes, occasionally flooded	853	*
256	Whitecabin silt loam, 0 to 1 percent slopes, occasionally flooded	123	*
257	Llanoseco silty clay loam, 0 to 1 percent slopes, frequently flooded	127	*
258	Codora silty clay loam, 0 to 1 percent slopes, occasionally flooded	5	*
260	Ordferry silty clay, 0 to 1 percent slopes, occasionally flooded	742	*
280	Columbia taxadjunct very fine sandy loam, 0 to 1 percent slopes, frequently flooded	1,029	0.1
290	Perkins gravelly loam, 0 to 2 percent slopes	1,276	0.1
300	Redsluff gravelly loam, 0 to 2 percent slopes	7,019	0.8
301	Wafap-Hamslough complex, 0 to 2 percent slopes	3,132	0.3
302	Redtough-Redswale complex, 0 to 2 percent slopes	7,270	0.8
303	Munjar-Tuscan taxadjunct-Galt complex, 0 to 2 percent slopes	3,702	0.4
304	Redtough loam, 8 to 35 percent slopes	377	*
305	Redtough-Redswale-Anita, gravelly duripan, complex, 0 to 5 percent slopes	2,556	0.3
306	Duric Xerarents complex, 0 to 1 percent slopes	1,356	0.1
307	Duric Xerarents, 0 to 1 percent slopes	1,076	0.1
310	Kimball loam, 1 to 3 percent slopes	3,733	0.4
317	Thompsonflat loam, 2 to 15 percent slopes	4,571	0.5
318	Thompsonflat-Oroville complex, 0 to 9 percent slopes	7,450	0.8
320	Vistarobles-Redding complex, 0 to 9 percent slopes	4,070	0.4
321	Durixeralfs-Typic Petraquepts complex, 0 to 2 percent slopes	1,869	0.2
330	Wilsoncreek-Trainer loams, 0 to 2 percent slopes, occasionally flooded	2,916	0.3
331	Thompsonflat loam, 15 to 30 percent slopes	2,031	0.2
335	Galt clay loam, 0 to 1 percent slopes	198	*
336	Galt clay, 0 to 1 percent slopes	1,394	0.2
337	Galt clay loam, 0 to 1 percent slopes, leveled	910	*
338	Oxyaquic Xerofluvents silt loam, 0 to 1 percent slopes	2,053	0.2

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Map unit name	Acres	Percent
339	Oxyaquic Xerofluvents sandy loam, 0 to 1 percent slopes, frequently flooded	820	*
340	Rock outcrop-Thermalrocks-Campbellhills complex, 2 to 15 percent slopes	4,238	0.5
341	Elsey-Beatsonhollow-Campbellhills-Rock outcrop complex, 2 to 5 percent slopes	846	*
342	Thermalrocks-Beatsonhollow taxadjunct-Rock outcrop complex, 2 to 30 percent slopes	813	*
343	Coalcanyon-Coonhollow complex, 5 to 15 percent slopes	839	*
344	Coalcanyon-Coonhollow-Rock outcrop complex, 15 to 30 percent slopes	1,961	0.2
346	Cherotable-Elsey complex, 2 to 15 percent slopes	1,038	0.1
347	Haplic Palexeralfs loam, 0 to 5 percent slopes	851	*
353	Cherokeespring gravelly silt loam, 2 to 15 percent slopes	1,049	0.1
355	Coalcanyon-Talus complex, 15 to 30 percent slopes	391	*
356	Coalcanyon-Rock outcrop, cliffs-Talus-Coonhollow complex, 30 to 200 percent slopes	2,178	0.2
360	Typic Xerofluvents complex, 0 to 2 percent slopes	1,681	0.2
361	Typic Xerofluvents, sandy-skeletal, 0 to 2 percent slopes	469	*
362	Ultic Haploxeralfs, sandstone, low elevation, complex, 2 to 5 percent slopes	364	*
363	Ultic Haploxeralfs, sandstone, low elevation, complex, 5 to 15 percent slopes	465	*
364	Ultic Haploxeralfs, sandstone, low elevation, complex, 15 to 30 percent slopes	352	*
365	Palexerults, 15 to 30 percent slopes	1,779	0.2
366	Palexerults, 30 to 50 percent slopes	530	*
370	Palexerults, 2 to 15 percent slopes	1,519	0.2
375	Wickscorner loam, 2 to 10 percent slopes	1,194	0.1
376	Flagcanyon-Wickscorner complex, 2 to 5 percent slopes	2,049	0.2
377	Flagcanyon taxadjunct-Durixeralfs-Duraquerts complex, 0 to 5 percent slopes	1,016	0.1
400	Subaco taxadjunct clay, 0 to 1 percent slopes	7,609	0.8
415	Ignord fine sandy loam, 0 to 2 percent slopes	909	*
416	Calcic Haploxerolls, 0 to 1 percent slopes	220	*
418	Almendra loam, 0 to 1 percent slopes	13,052	1.4
419	Conejo fine sandy loam, 0 to 1 percent slopes, overwash	799	*
420	Conejo clay loam, 0 to 1 percent slopes	12,946	1.4
425	Vina fine sandy loam, 0 to 1 percent slopes	6,466	0.7
426	Vina loam, 0 to 1 percent slopes	1,056	0.1
439	Oxyaquic Xerofluvents clay, 0 to 1 percent slopes, frequently flooded	780	*
440	Oxyaquic Xerofluvents silt loam, 0 to 1 percent slopes, frequently flooded	1,060	0.1
441	Oxyaquic Xerofluvents very fine sandy loam, 0 to 1 percent slopes	916	*
442	Durixerolls-Haploxerolls clay loams, 0 to 2 percent slopes	2,303	0.3
443	Durixerolls-Haploxerolls loams, 0 to 2 percent slopes	789	*
445	Chico loam, 0 to 1 percent slopes	4,785	0.5
447	Charger fine sandy loam, 0 to 1 percent slopes	2,176	0.2
448	Haploxerolls clay loam, 0 to 2 percent slopes	4,821	0.5
449	Haploxerolls loam, 0 to 2 percent slopes	3,802	0.4
500	Lofgren-Blavo complex, 0 to 1 percent slopes	30,310	3.3
501	Lofgren-Blavo complex, 0 to 1 percent slopes, occasionally flooded	14,032	1.5
502	Blavo silt loam, 0 to 1 percent slopes, overwash, occasionally flooded	343	*
519	Edjobe silty clay, 0 to 1 percent slopes	3,818	0.4
520	Esquon-Neerdobe complex, 0 to 1 percent slopes	57,816	6.3
521	Neerdobe silt loam, 0 to 1 percent slopes, overwash	747	*
522	Clear Lake silty clay loam, 0 to 1 percent slopes, overwash, frequently flooded	695	*
523	Esquon silty clay loam, 0 to 1 percent slopes, overwash, frequently flooded	926	0.1
525	Govstanford loam, 0 to 1 percent slopes	531	*
526	Govstanford loam, 0 to 1 percent slopes, occasionally flooded	702	*
528	Neerdobe clay loam, 0 to 1 percent slopes	549	*
550	Dunstone-Loafercreek complex, dry, 1 to 15 percent slopes	6,520	0.7

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Map unit name	Acres	Percent
551	Dunstone-Lomarica-Argonaut taxadjunct complex, 15 to 30 percent slopes	4,764	0.5
552	Dunstone-Loafercreek complex, 2 to 15 percent slopes	6,619	0.7
553	Dunstone-Loafercreek complex, 15 to 30 percent slopes	702	*
554	Dunstone-Loafercreek complex, 30 to 50 percent slopes	5,660	0.6
555	Dunstone-Loafercreek complex, 50 to 90 percent slopes	1,046	0.1
556	Mounthope-Hartsmill complex, 2 to 15 percent slopes	499	*
557	Mounthope-Hartsmill complex, 15 to 30 percent slopes	2,524	0.3
558	Hartsmill-Mounthope complex, 30 to 50 percent slopes	3,771	0.4
559	Hartsmill-Mounthope complex, 50 to 70 percent slopes	2,332	0.3
560	Hartsmill-Mounthope complex, 70 to 90 percent slopes	884	*
561	Bigridge-Minniecreek complex, 2 to 15 percent slopes	303	*
562	Bigridge-Minniecreek complex, 15 to 30 percent slopes	810	*
563	Bigridge-Minniecreek complex, 30 to 50 percent slopes	1,634	0.2
564	Bigridge-Minniecreek complex, 50 to 70 percent slopes	450	*
565	Dunstone-Argonaut taxadjunct-Sunnyslope complex, 2 to 15 percent slopes	4,147	0.5
566	Dunstone-Loafercreek-Katskillhill complex, 2 to 15 percent slopes	6,024	0.7
567	Dunstone-Loafercreek-Argonaut taxadjunct complex, 2 to 15 percent slopes	4,573	0.5
577	Parkshill-Flanly-Hurleton complex, 2 to 15 percent slopes	6,168	0.7
578	Flanly-Swedesflat complex, 2 to 15 percent slopes	4,489	0.5
580	Surnuf taxadjunct-Griffgulch-Rock outcrop complex, 2 to 15 percent slopes	523	*
581	Surnuf taxadjunct-Griffgulch complex, 15 to 30 percent slopes	1,453	0.2
582	Surnuf taxadjunct-Griffgulch complex, 30 to 50 percent slopes	641	*
583	Surnuf taxadjunct-Griffgulch complex, 50 to 70 percent slopes	769	*
584	Flanly-Swedesflat-Rackerby complex, 15 to 30 percent slopes	8,165	0.9
585	Flanly-Sommeyflat complex, 2 to 15 percent slopes	2,387	0.3
586	Sommeyflat-Mounthope complex, 15 to 30 percent slopes	2,497	0.3
587	Sommeyflat-Mounthope-Hurleton complex, 30 to 50 percent slopes	4,283	0.5
588	Ultic Haploxeralfs, thermic, high terrace, 2 to 15 percent slopes	2,962	0.3
589	Ultic Haploxeralfs, thermic, high terrace, 15 to 30 percent slopes	1,828	0.2
590	Vistarobles-Redding-Argonaut taxadjunct-Haploxererts complex, 0 to 9 percent slopes	6,244	0.7
603	Oroville-Thermalito-Fernandez-Thompsonflat complex, 0 to 9 percent slopes	12,658	1.4
605	Duric Xerarents-Oroville complex, 0 to 1 percent slopes, leveled	576	*
606	Redtough-Fallager-Anita, gravelly duripan, complex, 0 to 3 percent slopes	2,611	0.3
609	Anita, gravelly duripan-Tuscan taxadjunct complex, 0 to 2 percent slopes	585	*
614	Doemill-Jokerst complex, 0 to 3 percent slopes	2,248	0.2
615	Doemill-Jokerst complex, 3 to 8 percent slopes	8,974	1.0
616	Jokerst-Doemill-Typic Haploxeralfs complex, 8 to 15 percent slopes	3,933	0.4
617	Jokerst-Doemill-Typic Haploxeralfs complex, 15 to 30 percent slopes	1,559	0.2
619	Carhart taxadjunct, 0 to 2 percent slopes	302	*
620	Doemill-Jokerst-Ultic Haploxeralfs, thermic, complex, 3 to 8 percent slopes	4,672	0.5
621	Doemill-Jokerst-Ultic Haploxeralfs, thermic, complex, 8 to 15 percent slopes	3,833	0.4
622	Xerorthents, shallow-Typic Haploxeralfs-Rock outcrop, cliffs, complex, 15 to 30 percent slopes	11,203	1.2
623	Xerorthents, shallow-Typic Haploxeralfs-Rock outcrop, cliffs, complex, 30 to 50 percent slopes	11,974	1.3
624	Ultic Haploxeralfs, mesic-Rockstripe complex, 2 to 15 percent slopes	8,198	0.9
625	Ultic Haploxeralfs, mesic-Rockstripe complex, 15 to 30 percent slopes	7,492	0.8
626	Ultic Haploxeralfs-Rockstripe-Rock outcrop, cliffs, complex, 30 to 50 percent slopes	11,401	1.2
627	Ultic Haploxeralfs-Rockstripe-Rock outcrop, cliffs, complex, 50 to 70 percent slopes	5,376	0.6
628	Rockstripe-Ultic Haploxeralfs-Rock outcrop, cliffs, complex, 70 to 100 percent slopes	2,016	0.2
629	Slideland gravelly loam, 3 to 15 percent slopes	619	*
630	Slideland gravelly loam, 15 to 30 percent slopes	388	*
631	Slideland gravelly loam, 30 to 50 percent slopes	253	*
632	Ultic Haploxeralfs, conglomerate, complex, 3 to 15 percent slopes	119	*
633	Ultic Haploxeralfs, conglomerate, complex, 15 to 30 percent slopes	578	*
634	Ultic Haploxeralfs, conglomerate, complex, 30 to 50 percent slopes	853	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Map unit name	Acres	Percent
635	Ultic Haploxeralfs, conglomerate, complex, 50 to 70 percent slopes	266	*
636	Ultic Haploxeralfs, conglomerate, complex, 70 to 100 percent slopes	35	*
637	Ultic Haploxeralfs, sandstone, 3 to 15 percent slopes	22	*
638	Ultic Haploxeralfs, sandstone, 15 to 30 percent slopes	59	*
639	Ultic Haploxeralfs, sandstone, 30 to 50 percent slopes	47	*
640	Ultic Haploxeralfs, sandstone, 50 to 70 percent slopes	83	*
641	Ultic Haploxeralfs, sandstone, 70 to 100 percent slopes	173	*
642	Chinacamp gravelly loam, 3 to 15 percent slopes	519	*
643	Chinacamp gravelly loam, 15 to 30 percent slopes	2,085	0.2
644	Chinacamp gravelly loam, 30 to 50 percent slopes	1,338	0.1
645	Chinacamp gravelly loam, 50 to 70 percent slopes	325	*
646	Coalcanyon taxadjunct very gravelly loam, 3 to 15 percent slopes	73	*
647	Coalcanyon taxadjunct very gravelly loam, 15 to 30 percent slopes	593	*
648	Coalcanyon taxadjunct very gravelly loam, 30 to 50 percent slopes	688	*
649	Coalcanyon taxadjunct very gravelly loam, 50 to 70 percent slopes	219	*
650	Schott very gravelly loam, 3 to 15 percent slopes	691	*
651	Schott very gravelly loam, 15 to 30 percent slopes	2,067	0.2
652	Schott-Rock outcrop complex, 30 to 50 percent slopes	6,217	0.7
654	Coridge-Rock outcrop complex, 3 to 8 percent slopes	1,521	0.2
655	Coridge-Rock outcrop complex, 8 to 15 percent slopes	209	*
656	Rock outcrop, cliffs-Coalcanyon taxadjunct complex, 15 to 50 percent slopes	803	*
657	Bonneyridge-Chawanakee-Rock outcrop complex, 2 to 15 percent slopes	1,880	0.2
658	Bonneyridge-Chawanakee-Rock outcrop complex, 15 to 30 percent slopes	4,985	0.5
659	Bonneyridge-Chawanakee-Rock outcrop complex, 30 to 50 percent slopes	6,288	0.7
660	Bonneyridge-Chawanakee-Rock outcrop complex, 50 to 70 percent slopes	2,145	0.2
661	Millerridge-Boxrobber complex, 3 to 15 percent slopes	577	*
662	Millerridge-Boxrobber complex, 15 to 30 percent slopes	1,101	0.1
663	Millerridge-Boxrobber complex, 30 to 50 percent slopes	1,272	0.1
664	Millerridge-Boxrobber complex, 50 to 70 percent slopes	357	*
665	Surnuf-Bigridge complex, 3 to 15 percent slopes	806	*
666	Surnuf-Bigridge complex, 15 to 30 percent slopes	1,404	0.2
667	Surnuf-Bigridge complex, 30 to 50 percent slopes	1,410	0.2
668	Surnuf-Bigridge complex, 50 to 70 percent slopes	670	*
669	Oroshore-Mounthope-Dunstone complex, 3 to 15 percent slopes	1,981	0.2
670	Oroshore-Mounthope-Dunstone complex, 15 to 30 percent slopes	3,799	0.4
671	Oroshore-Mounthope-Dunstone complex, 30 to 50 percent slopes	3,793	0.4
672	Oroshore-Mounthope-Dunstone complex, 50 to 70 percent slopes	1,942	0.2
674	Chawanakee-Bonneyridge-Rock outcrop complex, 70 to 110 percent slopes	968	0.1
675	Clearhayes-Hamslough complex, 0 to 2 percent slopes	3,090	0.3
676	Carhart-Anita taxadjunct complex, 0 to 12 percent slopes	3,739	0.4
677	Tuscan-Fallager-Anita, gravelly duripan, complex, 0 to 3 percent slopes	5,661	0.6
679	Lucksev-Butteside-Carhart complex, 2 to 15 percent slopes	7,776	0.8
680	Lucksev-Butteside complex, 15 to 35 percent slopes	2,789	0.3
683	Typic Haploxeralfs, magnesic, low elevation-Earlal-Rock outcrop complex, 3 to 15 percent slopes	102	*
684	Typic Haploxeralfs, magnesic, low elevation-Earlal-Rock outcrop complex, 15 to 30 percent slopes	191	*
685	Bosquejo taxadjunct clay, 0 to 2 percent slopes	624	*
686	Redsluff taxadjunct clay loam, 0 to 2 percent slopes	853	*
687	Xerorthents, shallow-Typic Haploxeralfs complex, 2 to 15 percent slopes	2,196	0.2
700	Retsongulch-Flumewall complex, 70 to 100 percent slopes	1,533	0.2
701	Powellton-Obstruction complex, 50 to 70 percent slopes	788	*
702	Cerpone-Typic Haploxeralfs, magnesic-Earlal complex, 3 to 15 percent slopes	247	*
703	Cerpone-Typic Haploxeralfs, magnesic-Earlal-Rock outcrop complex, 15 to 30 percent slopes	1,593	0.2
704	Typic Haploxeralfs, magnesic-Earlal-Cerpone-Rock outcrop complex, 30 to 50 percent slopes	3,369	0.4
705	Typic Haploxeralfs, magnesic-Earlal-Cerpone-Rock outcrop complex, 50 to 80 percent slopes	1,878	0.2
711	Dixmine-Toadtown complex, 3 to 15 percent slopes	18	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Map unit name	Acres	Percent
712	Dixmine-Toadtown complex, 15 to 30 percent slopes	556	*
713	Dixmine-Toadtown complex, 30 to 50 percent slopes	688	*
714	Dixmine-Toadtown complex, 50 to 70 percent slopes	575	*
715	Logtrain-Bottlehill-Walkermine complex, 70 to 110 percent slopes	1,113	0.1
716	Griffgulch-Surnuf complex, 3 to 15 percent slopes	269	*
717	Griffgulch-Surnuf complex, 15 to 30 percent slopes	1,572	0.2
718	Griffgulch-Surnuf-Spine taxadjunct complex, 30 to 50 percent slopes	4,108	0.4
719	Griffgulch-Surnuf-Spine taxadjunct complex, 50 to 70 percent slopes	1,421	0.2
720	Dystroxerepts-Haploxeralfs-Rock outcrop complex, 70 to 110 percent slopes	3,822	0.4
721	Haploxerands, granitic till, 2 to 15 percent slopes	729	*
722	Haploxerands, granitic till, 15 to 30 percent slopes	968	0.1
723	Haploxerands, granitic till, 30 to 50 percent slopes	474	*
724	Haploxerands, volcanic till, 2 to 15 percent slopes	476	*
725	Haploxerands, volcanic till, 15 to 30 percent slopes	1,053	0.1
726	Haploxerands, volcanic till, 30 to 50 percent slopes	560	*
727	Bonneyridge sandy loam, 1 to 15 percent slopes	1,075	0.1
728	Bonneyridge sandy loam, 15 to 30 percent slopes	1,666	0.2
729	Bonneyridge sandy loam, 30 to 50 percent slopes	556	*
730	Tusccoll-Schott complex, 30 to 50 percent slopes	3,637	0.4
731	Tusccoll-Schott complex, 50 to 70 percent slopes	2,415	0.3
732	Bonepile taxadjunct, 2 to 8 percent slopes	654	*
733	Haploxeralfs, terrace, 0 to 5 percent slopes	530	*
734	Haploxerands-Aquic Xerofluvents complex, 0 to 15 percent slopes	713	*
735	Fluvaquents, loamy, 0 to 3 percent slopes	241	*
801	Obstruction gravelly sandy loam, 3 to 15 percent slopes	1,354	0.1
802	Obskel-Obstruction complex, 15 to 30 percent slopes	3,353	0.4
803	Obskel-Obstruction complex, 30 to 50 percent slopes	4,923	0.5
804	Obskel-Obstruction-Retsongulch complex, 50 to 70 percent slopes	3,134	0.3
805	Bottlehill-Walkermine-Logtrain complex, 3 to 15 percent slopes	509	*
806	Bottlehill-Walkermine-Logtrain complex, 15 to 30 percent slopes	1,739	0.2
807	Bottlehill-Logtrain-Walkermine complex, 30 to 50 percent slopes	3,485	0.4
808	Bottlehill-Walkermine-Logtrain complex, 50 to 70 percent slopes	2,949	0.3
809	Walkermine-Bottlehill-Logtrain-Rock outcrop complex, 70 to 110 percent slopes	1,048	0.1
810	Dixmine-Mac-Spine complex, 30 to 50 percent slopes	2,027	0.2
811	Powellton-Toadtown complex, 3 to 15 percent slopes	1,297	0.1
812	Powellton-Toadtown complex, 15 to 30 percent slopes	3,097	0.3
813	Powellton-Toadtown complex, 30 to 50 percent slopes	2,579	0.3
814	Mountyana gravelly loam, 2 to 15 percent slopes	8,095	0.9
815	Mountyana gravelly loam, 15 to 30 percent slopes	3,130	0.3
817	Lydon very gravelly medial coarse sandy loam, 2 to 15 percent slopes	377	*
818	Lydon very gravelly medial coarse sandy loam, 15 to 30 percent slopes	506	*
819	Lydon-Rock outcrop complex, 30 to 50 percent slopes	2,006	0.2
820	Lydon-Rock outcrop complex, 50 to 70 percent slopes	358	*
821	Lydon-Rock outcrop complex, 70 to 100 percent slopes	175	*
822	Bonepile gravelly medial loam, 2 to 15 percent slopes	2,952	0.3
823	Bonepile gravelly medial loam, 15 to 30 percent slopes	1,978	0.2
824	Beecee very gravelly medial loam, 30 to 50 percent slopes	8,807	1.0
825	Beecee-Lydon complex, 50 to 70 percent slopes	2,347	0.3
826	Redbone gravelly medial sandy loam, 3 to 15 percent slopes	3,179	0.3
827	Redbone gravelly medial sandy loam, 15 to 30 percent slopes	1,519	0.2
829	Paradiso loam, 2 to 15 percent slopes	17,694	1.9
830	Paradiso loam, 15 to 30 percent slopes	3,545	0.4
831	Surnuf-Bigridge-Spine complex, 3 to 15 percent slopes	886	*
832	Surnuf-Bigridge-Spine complex, 15 to 30 percent slopes	1,185	0.1
833	Surnuf-Bigridge-Spine complex, 30 to 50 percent slopes	837	*
834	Hietanen-Mac complex, 3 to 15 percent slopes	233	*
835	Hietanen-Mac complex, 15 to 30 percent slopes	544	*
836	Hietanen-Mac-Spine complex, 30 to 50 percent slopes	1,648	0.2
837	Hietanen-Spine-Mac complex, 50 to 70 percent slopes	1,419	0.2
838	Dixmine-Spine-Mac complex, 50 to 70 percent slopes	2,649	0.3
839	Chawanakee-Billscabin complex, 2 to 15 percent slopes	311	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Map unit name	Acres	Percent
841	Billscabin-Bonneyridge complex, 30 to 50 percent slopes	937	0.1
842	Billscabin-Bonneyridge complex, 50 to 70 percent slopes	1,158	0.1
846	Bonneyridge-Lewisflat complex, 2 to 15 percent slopes	957	0.1
847	Bonneyridge-Lewisflat complex, 15 to 30 percent slopes	4,540	0.5
848	Bonneyridge-Lewisflat complex, 30 to 50 percent slopes	3,968	0.4
850	Lewisflat loam, 2 to 15 percent slopes	569	*
851	Lewisflat loam, 15 to 30 percent slopes	1,236	0.1
852	Lewisflat loam, 30 to 50 percent slopes	420	*
860	Toadtown-Powellton complex, 2 to 15 percent slopes	3,296	0.4
861	Toadtown-Powellton complex, 15 to 30 percent slopes	6,272	0.7
862	Toadtown-Powellton complex, 30 to 50 percent slopes	1,768	0.2
863	Toadtown-Powellton complex, 50 to 70 percent slopes	735	*
880	Sites-Jocal taxadjuncts, 2 to 15 percent slopes	1,200	0.1
881	Sites-Jocal taxadjuncts, 15 to 30 percent slopes	1,685	0.2
882	Sites-Jocal taxadjuncts, 30 to 50 percent slopes	1,392	0.2
883	Sites-Jocal taxadjuncts, 50 to 70 percent slopes	90	*
885	Rogerville silt loam, 2 to 15 percent slopes	1,383	0.2
886	Rogerville silt loam, 15 to 30 percent slopes	1,605	0.2
892	Rogerville silt loam, 50 to 70 percent slopes	110	*
893	Rogerville silt loam, 30 to 50 percent slopes	364	*
902	Lava flows-Lumpkin complex, 0 to 15 percent slopes	482	*
903	Mudwash-Timberisland-Lavatop complex, 2 to 30 percent slopes	2,125	0.2
904	Lava flows-Lavatop complex, 15 to 30 percent slopes	124	*
905	Lava flows-Lumpkin complex, 30 to 50 percent slopes	201	*
906	Lava flows-Lumpkin complex, 50 to 70 percent slopes	112	*
911	Endoaquolls, 0 to 8 percent slopes	213	*
923	Powderhouse-McNair-Greenwell complex, 2 to 15 percent slopes	1,249	0.1
924	Powderhouse-McNair-Greenwell complex, 15 to 30 percent slopes	2,158	0.2
925	Powderhouse-McNair-Greenwell complex, 30 to 50 percent slopes	1,650	0.2
930	Shakeridge-Timberisland complex, 0 to 15 percent slopes	267	*
931	Shakeridge-Mudwash-Timberisland complex, 15 to 30 percent slopes	1,587	0.2
932	Shakeridge-Mudwash complex, 30 to 50 percent slopes	866	*
933	Shakeridge gravelly medial coarse sandy loam, 50 to 70 percent slopes	138	*
934	Mudwash gravelly medial sandy loam, 0 to 15 percent slopes	1,001	0.1
939	Fluvaquentic Humaquepts, 0 to 15 percent slopes	268	*
940	Dejonah-Stagpoint complex, 2 to 15 percent slopes	1,000	0.1
941	Dejonah-Stagpoint complex, 15 to 30 percent slopes	2,236	0.2
942	Stagpoint-Dejonah complex, 30 to 50 percent slopes	2,759	0.3
948	Stagpoint-Dejonah complex, 50 to 70 percent slopes	268	*
949	Rogerville taxadjunct, 30 to 50 percent slopes	181	*
950	Lumpkin taxadjunct-Rock outcrop-Powderhouse complex, 0 to 15 percent slopes	412	*
951	Lumpkin taxadjunct-Rock outcrop-Powderhouse complex, 15 to 30 percent slopes	136	*
960	Surnuf gravelly loam, 3 to 8 percent slopes, high elevation	994	0.1
961	Surnuf gravelly loam, 8 to 15 percent slopes, high elevation	132	*
962	Surnuf gravelly loam, 15 to 30 percent slopes, high elevation	250	*
963	Surnuf gravelly loam, 30 to 50 percent slopes, high elevation	269	*
990	Riverwash, 0 to 2 percent slopes, frequently flooded	1,835	0.2
991	Xerofluvents, 0 to 4 percent slopes, frequently flooded	1,788	0.2
995	Pits, gravel	84	*
996	Dumps, excavated material	179	*
997	Pits	742	*
998	Dumps, landfill	95	*
999	Water	21,757	2.4
DAM	Dam	192	*
	Total	930,752	100.0

* Less than 0.1 percent.

Table 5.--Land Capability Classification

(The land capability system groups soils primarily on the basis of their ability to produce the commonly grown cultivated crops and pasture plants over a long period of time without deteriorating. Absence of an entry indicates that no land capability classification is assigned. N represents nonirrigated areas, and I represents irrigated areas)

Map symbol and soil name	Land capability	
	N	I
100:		
Anita clay	6s-5	6s-5
Galt clay	5w-2	5w-2
104:		
Bosquejo clay	3w-2	2w-2
105:		
Busacca clay loam	3s-2	2s-2
108:		
Tuscan gravelly loam	7s-8	7s-8
Igo gravelly loam	7s-8	7s-8
Anita clay	6s-5	6s-5
109:		
Bosquejo clay loam	3w-2	2w-2
110:		
Bosquejo silt loam, overwash, occasionally flooded	3w-2	2w-2
111yu:		
Auburn loam	4e-8	4e-8
Sobrante loam	3e-8	3e-8
114yu:		
Auburn gravelly loam	4e-8	4e-8
Sobrante gravelly loam	3e-8	3e-8
118:		
Xerorthents, tailings	4e-7	4e-7
118co:		
Clear Lake clay, frequently flooded	4w-2	4w-2
119:		
Xerorthents, tailings	4e-7	4e-7
Urban land	8	8
119yu:		
Auburn gravelly loam	6e-8	6e-8
Sobrante gravelly loam	6e-8	6e-8
Rock outcrop	8	8
120:		
Gridley taxadjunct clay loam	3w-8	3w-8

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
121:		
Boga loam	3s-3	2s-3
Loemstone loam	3s-3	3s-3
121su:		
Columbia fine sandy loam, frequently flooded	4w	4w
125:		
Gridley taxadjunct loam	3w-8	3w-8
Calcic Haploxerolls sandy loam	3s-6	3s-6
126:		
Liveoak sandy loam	3s-2	2s-2
127:		
Gridley taxadjunct loam	3w-8	3w-8
130:		
Eastbiggs loam	5w-2	5w-2
133:		
Eastbiggs loam	5w-2	5w-2
Galt clay loam	5w-2	5w-2
136:		
Duric Xerarents, cut	5w-2	5w-2
Duric Xerarents, fill	4w-5	4w-5
Eastbiggs fine sandy loam, leveled	5w-2	5w-2
138su:		
Liveoak sandy clay loam	3s-2	2s-2
139su:		
Liveoak taxadjunct loam, frequently flooded	4w-2	4w-2
Galt taxadjunct clay loam, frequently flooded	5w-2	5w-2
143su:		
Marcum clay loam	3s-3	2s-3
Gridley clay loam	3s-3	3s-3
149yu:		
Flanly sandy loam	4e-1	4e-1
150:		
Columbia stratified sand to fine sandy loam	4w-2	4w-2
150su:		
Olashes sandy loam	3c	1
151yu:		
Flanly sandy loam	7e-1	7e-1
152:		
Gianella fine sandy loam, frequently flooded	4w-2	4w-2

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
153:		
Gianella sandy loam, frequently flooded	4w-2	4w-2
154:		
Gianella silt loam, frequently flooded	4w-2	4w-2
158:		
Gianella fine sandy loam, occasionally flooded	3w-2	2w-2
160:		
Gianella loam, occasionally flooded	3w-2	2w-2
161:		
Gianella fine sandy loam, rarely flooded	3s-4	2s-4
162:		
Gianella loam, rarely flooded	3s-4	2s-4
163yu:		
Holillipah loamy sand	4w-2	4w-2
165yu:		
Holland loam	4e-1	4e-1
Hoda loam	4e-1	4e-1
Hotaw loam	6e-1	6e-1
173yu:		
Hotaw loam	6e-1	6e-1
Chawanakee gravelly sandy loam	7e-1	7e-1
Holland loam	4e-1	4e-1
175:		
Farwell clay loam, rarely flooded	3s-2	1
176:		
Farwell loam, occasionally flooded	3s-2	2s-2
176yu:		
Jocal loam	3e-1	3e-1
177:		
Farwell silt loam, occasionally flooded	3s-2	2s-2
178:		
Arbuckle gravelly loam	3s-4	2s-4
179:		
Moda taxadjunct loam	5w-2	5w-2
Arbuckle gravelly loam	3s-4	2s-4
180:		
Dodgeland silty clay loam, occasionally flooded	5w-2	5w-2
181:		
Dodgeland silty clay loam, frequently flooded	5w-2	5w-2

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
188yu:		
Mariposa taxadjunct gravelly loam	4e-1	4e-1
189:		
Esquon silt loam, overwash	5w-2	5w-2
189yu:		
Mariposa taxadjunct gravelly loam	6e-1	6e-1
196yu:		
Mildred cobbly loam	7e-1	7e-1
200:		
Parrott silt loam, occasionally flooded	3w-2	3w-2
201:		
Parrott silt loam, frequently flooded	4w-2	4w-2
203:		
Kusalslough silty clay loam, occasionally flooded	3w-2	2w-2
205:		
Parrott silt loam, frequently flooded	4w-2	4w-2
Vermet silt loam, frequently flooded	5w-2	5w-2
206:		
Islandbar sandy loam	4e-1	4e-1
Chawanakee gravelly sandy loam	7e-1	7e-1
207:		
Islandbar sandy loam	6e-1	6e-1
Chawanakee gravelly sandy loam	7e-1	7e-1
208:		
Islandbar sandy loam	7e-1	7e-1
Chawanakee gravelly sandy loam	7e-1	7e-1
209:		
Islandbar sandy loam	8	8
Chawanakee gravelly sandy loam	8	8
210:		
Featherfalls sandy loam	4e-1	4e-1
Islandbar sandy loam	4e-1	4e-1
211:		
Featherfalls sandy loam	6e-1	6e-1
Islandbar sandy loam	6e-1	6e-1
212:		
Featherfalls sandy loam	7e-1	7e-1
Islandbar sandy loam	7e-1	7e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
213:		
Featherfalls sandy loam	8	8
Islandbar sandy loam	8	8
214:		
Crystalhill gravelly coarse sandy loam	4e-1	4e-1
Oregongulch gravelly sandy loam	7e-1	7e-1
Craigsaddle coarse sandy loam	4e-1	4e-1
Rock outcrop, trondhjemite	8	8
215:		
Crystalhill gravelly coarse sandy loam	6e-1	6e-1
Oregongulch gravelly sandy loam	7e-1	7e-1
Craigsaddle coarse sandy loam	6e-1	6e-1
Rock outcrop, trondhjemite	8	8
216:		
Crystalhill gravelly coarse sandy loam	7e-1	7e-1
Oregongulch gravelly sandy loam	7e-1	7e-1
Craigsaddle coarse sandy loam	7e-1	7e-1
Rock outcrop, trondhjemite	8	8
217:		
Crystalhill gravelly coarse sandy loam	8	8
Oregongulch gravelly sandy loam	8	8
Craigsaddle coarse sandy loam	8	8
Rock outcrop, trondhjemite	8	8
218:		
Rock outcrop, quartz diorite	8	8
Lithic Xerorthents gravelly sandy loam	8	8
Chawanakee gravelly sandy loam	7e-1	7e-1
219:		
Rock outcrop, quartz diorite	8	8
Lithic Xerorthents gravelly sandy loam	8	8
Chawanakee gravelly sandy loam	8	8
220:		
Esquon clay, frequently flooded	5w-2	5w-2
Clear Lake silty clay loam, overwash	5w-2	5w-2
221yu:		
Sites loam	3e-1	2e-1
222yu:		
Sites loam	3e-1	3e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
225yu:		
Sites gravelly loam, bedrock substratum	3e-1	2e-1
226yu:		
Sites gravelly loam, bedrock substratum	3e-1	3e-1
227yu:		
Sites gravelly loam, bedrock substratum	4e-1	4e-1
242yu:		
Surnuf loam	3e-1	3e-1
243yu:		
Surnuf loam	4e-1	4e-1
244yu:		
Surnuf loam	6e-1	6e-1
245:		
Surnuf loam	7e-1	7e-1
248yu:		
Trainer loam	3w-2	2w-2
250:		
Llanoseco, occasionally flooded	3w-2	2w-2
252:		
Whitecabin silty clay, occasionally flooded	3w-2	3w-2
Ordferry silty clay, occasionally flooded	5w-2	5w-2
252yu:		
Woodleaf gravelly loam	7e-1	7e-1
253yu:		
Woodleaf gravelly loam	7e-1	7e-1
255:		
Whitecabin silty clay loam, occasionally flooded	3w-2	3w-2
Ordferry silty clay, occasionally flooded	5w-2	5w-2
256:		
Whitecabin silt loam, occasionally flooded	3w-2	3w-2
257:		
Llanoseco, frequently flooded	4w-2	4w-2
258:		
Codora, occasionally flooded	2w-2	3w-2
260:		
Ordferry silty clay, occasionally flooded	5w-2	5w-2
280:		
Columbia taxadjunct stratified very fine sandy loam	5w-2	5w-2
290:		
Perkins gravelly loam	3s-4	2s-4
300:		
Redsluff gravelly loam	3s-11	2s-11

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
301:		
Wafap gravelly loam	5w-2	5w-2
Hamslough clay	5w-2	5w-2
302:		
Redtough loam	7s-8	7s-8
Redswale cobbly loam	8	8
303:		
Munjar gravelly loam	6s-3	6s-3
Tuscan taxadjunct gravelly clay loam	5w-8	5w-8
Galt clay	5w-2	5w-2
304:		
Redtough loam	7s-8	7s-8
305:		
Redtough gravelly loam	6e-8	6e-8
Redswale loam	8	8
Anita, gravelly duripan	7w-2	7w-2
306:		
Duric Xerarents, fill	7w-2	7w-2
Duric Xerarents, cut	7w-2	7w-2
307:		
Duric Xerarents clay loam, leveled	7w-2	7w-2
310:		
Kimball loam	3s-3	2s-3
317:		
Thompsonflat loam	3e-3	3e-3
318:		
Thompsonflat fine sandy loam	3e-3	3e-3
Oroville gravelly fine sandy loam	4e-3	4e-3
320:		
Vistarobles sandy loam	7e-8	7e-8
Redding loam	3e-3	3e-3
321:		
Durixeralfs, fine-loamy, gravelly fine sandy loam	4s-8	4s-8
Durixeralfs, loamy-skeletal, gravelly fine sandy loam	7w-8	7w-8
Typic Petraquepts silty clay	7w-3	7w-3
330:		
Wilsoncreek loam, occasionally flooded	3w-2	2w-2
Trainer loam, occasionally flooded	3w-2	2w-2

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
331:		
Thompsonflat loam	4e-3	4e-3
335:		
Galt clay loam	5w-2	5w-2
336:		
Galt clay	5w-2	5w-2
337:		
Galt clay loam	5w-2	5w-2
338:		
Oxyaquic Xerofluvents silt loam	3w-2	3w-2
339:		
Oxyaquic Xerofluvents sandy loam, frequently flooded	4w-2	4w-2
340:		
Rock outcrop, Lovejoy basalt	8	8
Thermalrocks very gravelly loam	8	8
Campbellhills gravelly loam	6e-4	6e-4
341:		
Elsey loam	6e-8	6e-8
Beatsonhollow gravelly loam	7w-2	7w-2
Campbellhills gravelly loam	6e-4	6e-4
Rock outcrop, Lovejoy basalt	8	8
342:		
Thermalrocks very gravelly loam	8	8
Beatsonhollow taxadjunct fine sandy loam	6e-8	6e-8
Rock outcrop, Lovejoy basalt	8	8
343:		
Coalcanyon very cobbly loam	4s-7	4s-7
Coonhollow gravelly loam	4s-7	4s-7
344:		
Coalcanyon very cobbly loam	4s-7	4s-7
Coonhollow gravelly loam	4s-7	4s-7
Rock outcrop, Lovejoy basalt	8	8
346:		
Cherotable loam	3e-1	3e-1
Elsey loam	6e-8	6e-8
347:		
Haplic Palexeralfs loam	3s-4	3s-4
353:		
Cherokeespring gravelly silt loam	3e-1	3e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
355:		
Coalcanyon very cobbly loam	4s-7	4s-7
Talus	8	8
356:		
Coalcanyon very cobbly loam	6e-7	6e-7
Rock outcrop, basalt cliffs	8	8
Talus	8	8
Coonhollow gravelly loam	6e-7	6e-7
360:		
Typic Xerofluvents, coarse-loamy	3s-4	2s-4
Typic Xerofluvents, sandy-skeletal	7s-4	7s-4
361:		
Typic Xerofluvents, sandy-skeletal	7s-4	7s-4
362:		
Ultic Haploxeralfs, sandstone, low elevation, very deep	3e-1	2e-1
Ultic Haploxeralfs, sandstone, low elevation, deep	3e-1	2e-1
363:		
Ultic Haploxeralfs, sandstone, low elevation, very deep	3e-1	3e-1
Ultic Haploxeralfs, sandstone, low elevation, deep	3e-1	3e-1
364:		
Ultic Haploxeralfs, sandstone, low elevation, deep	4e-1	4e-1
Ultic Haploxeralfs, sandstone, low elevation, very deep	4e-1	4e-1
365:		
Palexerults gravelly loam	4e-1	4e-1
366:		
Palexerults gravelly loam	6e-1	6e-1
370:		
Palexerults gravelly loam	3e-1	3e-1
375:		
Wickscorner loam	3e-1	2e-1
376:		
Flagcanyon gravelly loam	3e-3	3e-3
Wickscorner loam	3e-1	2e-1
377:		
Flagcanyon taxadjunct fine sandy loam	3e-3	3e-3
Durixeralfs clayey-skeletal loam	6e-2	6e-2
Duraquerts, gravelly clay	5w-2	5w-2

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
400:		
Subaco taxadjunct clay	5w-2	5w-2
415:		
Ignord fine sandy loam	3s-6	2s-6
416:		
Calcic Haploxerolls sandy loam	3s-6	3s-6
418:		
Almendra loam	3c-1	1
419:		
Conejo fine sandy loam, overwash	3c-1	1
420:		
Conejo clay loam	3c-1	1
425:		
Vina fine sandy loam	3c-11	2s-11
426:		
Vina loam	3c-1	1
439:		
Oxyaquic Xerofluvents clay	5w-2	5w-2
440:		
Oxyaquic Xerofluvents silt loam, frequently flooded	4w-2	4w-2
441:		
Oxyaquic Xerofluvents very fine sandy loam	3w-2	3w-2
442:		
Durixerolls clay loam	5w-2	5w-2
Haploxerolls clay loam	3s-2	3s-2
443:		
Durixerolls loam	5w-2	5w-2
Haploxerolls loam	3s-2	3s-2
445:		
Chico loam	3c-1	1
447:		
Charger fine sandy loam	3s-11	2s-11
448:		
Haploxerolls clay loam	2s-3	3s-3
449:		
Haploxerolls loam	2s-3	3s-3
500:		
Lofgren clay	5w-2	5w-2
Blavo clay	5w-2	5w-2
501:		
Lofgren clay, occasionally flooded	5w-2	5w-2
Blavo clay, occasionally flooded	5w-2	5w-2

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
502:		
Blavo silt loam, overwash, occasionally flooded--	5w-2	5w-2
519:		
Edjobe silty clay----------	5w-2	5w-2
520:		
Esquon clay----------	5w-2	5w-2
Neerdobe clay----------	5w-2	5w-2
521:		
Neerdobe silt loam, overwash----------	5w-2	5w-2
522:		
Clear Lake silty clay loam, overwash----------	5w-2	5w-2
523:		
Esquon silty clay loam, overwash----------	5w-2	5w-2
525:		
Govstanford loam----------	3s-3	3s-3
526:		
Govstanford loam, occasionally flooded----------	3w-2	3w-2
528:		
Neerdobe clay loam----------	5w-2	5w-2
550:		
Dunstone loam, dry----------	4e-1	4e-1
Loafercreek silt loam, dry----------	3e-1	3e-1
551:		
Dunstone loam, dry----------	6e-1	6e-1
Lomarica loam----------	4e-4	4e-4
Argonaut taxadjunct loam----------	4e-4	4e-4
552:		
Dunstone gravelly loam----------	7e-1	7e-1
Loafercreek gravelly loam----------	3e-4	3e-1
553:		
Dunstone gravelly loam----------	7e-1	7e-1
Loafercreek gravelly loam----------	4e-1	4e-1
554:		
Dunstone gravelly loam----------	7e-1	7e-1
Loafercreek gravelly loam----------	6e-1	6e-1
555:		
Dunstone gravelly loam----------	8	8
Loafercreek gravelly loam----------	8	8

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
556:		
Mounthope loam	3e-1	3e-1
Hartsmill gravelly loam	3e-7	3e-7
557:		
Mounthope loam	4e-1	4e-1
Hartsmill gravelly loam	4e-1	4e-1
558:		
Hartsmill gravelly loam	6e-1	6e-1
Mounthope loam	6e-1	6e-1
559:		
Hartsmill gravelly loam	7e-1	7e-1
Mounthope loam	7e-1	7e-1
560:		
Hartsmill gravelly loam	8	8
Mounthope loam	8	8
561:		
Bigridge loam	3e-7	3e-7
Minniecreek loam	3e-7	3e-7
562:		
Bigridge loam	4e-1	4e-1
Minniecreek loam	4e-1	4e-1
563:		
Bigridge loam	6e-1	6e-1
Minniecreek loam	6e-1	6e-1
564:		
Bigridge loam	7e-1	7e-1
Minniecreek loam	7e-1	7e-1
565:		
Dunstone loam, dry	4e-1	4e-1
Argonaut taxadjunct loam	3e-4	3e-4
Sunnyslope loam	7e-4	7e-4
566:		
Dunstone loam, dry	4e-1	4e-1
Loafercreek silt loam, dry	3e-1	3e-1
Katskillhill loam	3e-3	3e-3

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
567:		
Dunstone loam, dry	4e-1	4e-1
Loafercreek silt loam, dry	3e-1	3e-1
Argonaut taxadjunct loam	3e-4	3e-4
577:		
Parkshill coarse sandy loam	4e-4	4e-4
Flanly loam	4e-1	4e-1
Hurleton gravelly sandy loam	7e-4	7e-4
578:		
Flanly loam	4e-1	4e-1
Swedesflat cobbly fine sandy loam	7e-4	7e-4
580:		
Surnuf taxadjunct loam	3e-1	3e-1
Griffgulch very gravelly silt loam	3e-1	3e-1
Rock outcrop, metavolcanic	8	8
581:		
Surnuf taxadjunct loam	4e-1	4e-1
Griffgulch very gravelly silt loam	4e-1	4e-1
582:		
Surnuf taxadjunct loam	6e-1	6e-1
Griffgulch very gravelly silt loam	6e-1	6e-1
583:		
Surnuf taxadjunct loam	7e-1	7e-1
Griffgulch very gravelly silt loam	7e-1	7e-1
584:		
Flanly loam	6e-1	6e-1
Swedesflat cobbly fine sandy loam	7e-4	7e-4
Rackerby very gravelly sandy loam	7e-4	7e-4
585:		
Flanly loam	4e-1	4e-1
Sommeyflat loam	3e-1	3e-1
586:		
Sommeyflat loam	4e-1	4e-1
Mounthope loam	4e-1	4e-1
587:		
Sommeyflat loam	6e-1	6e-1
Mounthope loam	6e-1	6e-1
Hurleton gravelly sandy loam	7e-4	7e-4

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
588:		
Ultic Haploxeralfs, thermic, high terrace	3e-1	3e-1
589:		
Ultic Haploxeralfs, thermic, high terrace	4e-1	4e-1
590:		
Vistarobles sandy loam	7e-8	7e-8
Redding loam	3e-3	3e-3
Argonaut taxadjunct loam	3e-4	3e-4
Haploxererts gravelly silty clay	3e-3	3e-3
603:		
Oroville gravelly fine sandy loam	4e-3	4e-3
Thermalito sandy loam	3e-3	3e-3
Fernandez sandy loam	3e-3	3e-3
Thompsonflat fine sandy loam	3e-3	3e-3
605:		
Duric Xerarents fine sandy loam, leveled	7w-2	7w-2
Oroville gravelly fine sandy loam	6s-2	6s-2
606:		
Redtough loam	7s-8	7s-8
Fallager loam	8	8
Anita, gravelly duripan	6s-5	6s-5
609:		
Anita, gravelly duripan	7w-2	7w-2
Tuscan taxadjunct gravelly clay loam	5w-8	5w-8
614:		
Doemill gravelly loam	6s-8	6s-8
Jokerst very cobbly loam	8	8
615:		
Doemill gravelly loam	6e-8	6e-8
Jokerst very cobbly loam	8	8
616:		
Jokerst very cobbly loam	8	8
Doemill gravelly loam	6e-8	6e-8
Typic Haploxeralfs gravelly loam	3e-1	3e-1
617:		
Doemill gravelly loam	6e-8	6e-8
Jokerst very cobbly loam	8	8
Typic Haploxeralfs gravelly loam	4e-1	4e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
619:		
Carhart taxadjunct clay	5w-2	5w-2
620:		
Doemill gravelly loam	6e-8	6e-8
Jokerst very cobbly loam	8	8
Ultic Haploxeralfs, thermic, gravelly loam	4e-8	4e-8
621:		
Doemill gravelly loam	6e-8	6e-8
Jokerst very cobbly loam	8	8
Ultic Haploxeralfs, thermic, gravelly loam	4e-8	4e-8
622:		
Xerorthents, shallow	7s-8	7s-8
Typic Haploxeralfs gravelly loam	4e-1	4e-1
Rock outcrop, mudflow-breccia cliffs	8	8
623:		
Xerorthents, shallow	7s-8	7s-8
Typic Haploxeralfs gravelly loam	6e-1	6e-1
Rock outcrop, mudflow-breccia cliffs	8	8
624:		
Ultic Haploxeralfs, mesic, gravelly loam	3e-3	3e-1
Rockstripe very gravelly loam	7s-8	7s-8
625:		
Ultic Haploxeralfs, mesic, gravelly loam	4e-1	4e-1
Rockstripe very gravelly loam	7s-8	7s-8
626:		
Ultic Haploxeralfs gravelly loam	6e-1	6e-1
Rockstripe very gravelly loam	7s-8	7s-8
Rock outcrop, mudflow-breccia cliffs	8	8
627:		
Ultic Haploxeralfs gravelly loam	7e-1	7e-1
Rockstripe very gravelly loam	7s-8	7s-8
Rock outcrop, mudflow-breccia cliffs	8	8
628:		
Rockstripe very gravelly loam	8	8
Ultic Haploxeralfs gravelly loam	8	8
Rock outcrop, mudflow-breccia cliffs	8	8

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
629:		
Slideland gravelly loam	3e-1	3e-1
630:		
Slideland gravelly loam	4e-1	4e-1
631:		
Slideland gravelly loam	6e-1	6e-1
632:		
Ultic Haploxeralfs, conglomerate, very deep	3e-1	3e-1
Ultic Haploxeralfs, conglomerate, moderately deep	7s-8	7s-8
633:		
Ultic Haploxeralfs, conglomerate, very deep	4e-1	4e-1
Ultic Haploxeralfs, conglomerate, moderately deep	7s-8	7s-8
634:		
Ultic Haploxeralfs, conglomerate, very deep	6e-1	6e-1
Ultic Haploxeralfs, conglomerate, moderately deep	7s-8	7s-8
635:		
Ultic Haploxeralfs, conglomerate, very deep	7e-1	7e-1
Ultic Haploxeralfs, conglomerate, moderately deep	7s-8	7s-8
636:		
Ultic Haploxeralfs, conglomerate, moderately deep	8	8
Ultic Haploxeralfs, conglomerate, very deep	8	8
637:		
Ultic Haploxeralfs, sandstone	3e-1	3e-1
638:		
Ultic Haploxeralfs, sandstone	4e-1	4e-1
639:		
Ultic Haploxeralfs, sandstone	6e-1	6e-1
640:		
Ultic Haploxeralfs, sandstone	7e-1	7e-1
641:		
Ultic Haploxeralfs, sandstone	8	8
642:		
Chinacamp gravelly loam	3e-1	3e-1
643:		
Chinacamp gravelly loam	4e-1	4e-1
644:		
Chinacamp gravelly loam	6e-1	6e-1
645:		
Chinacamp gravelly loam	7e-1	7e-1
646:		
Coalcanyon taxadjunct very gravelly loam	4s-7	4s-7

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
647:		
Coalcanyon taxadjunct very gravelly loam---------	4s-7	4s-7
648:		
Coalcanyon taxadjunct very gravelly loam---------	6e-7	6e-7
649:		
Coalcanyon taxadjunct very gravelly loam---------	7e-7	7e-7
650:		
Schott very gravelly loam------------------------	4e-1	4e-1
651:		
Schott very gravelly loam------------------------	4e-1	4e-1
652:		
Schott very gravelly loam------------------------	6e-1	6e-1
Rock outcrop, mudflow breccia--------------------	8	8
654:		
Coridge bouldery loam----------------------------	7e-7	7e-7
Rock outcrop, Cohasset basalt--------------------	8	8
655:		
Coridge bouldery loam----------------------------	7e-7	7e-7
Rock outcrop, Cohasset basalt--------------------	8	8
656:		
Rock outcrop, basalt cliffs----------------------	8	8
Coalcanyon taxadjunct very gravelly loam---------	6e-7	6e-7
657:		
Bonneyridge sandy loam---------------------------	4e-1	4e-1
Chawanakee gravelly sandy loam-------------------	7e-1	7e-1
Rock outcrop, quartz diorite---------------------	8	8
658:		
Bonneyridge sandy loam---------------------------	6e-1	6e-1
Chawanakee gravelly sandy loam-------------------	7e-1	7e-1
Rock outcrop, quartz diorite---------------------	8	8
659:		
Bonneyridge sandy loam---------------------------	7e-1	7e-1
Chawanakee gravelly sandy loam-------------------	7e-1	7e-1
Rock outcrop, quartz diorite---------------------	8	8
660:		
Bonneyridge sandy loam---------------------------	8	8
Chawanakee gravelly sandy loam-------------------	8	8
Rock outcrop, quartz diorite---------------------	8	8

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
661:		
Millerridge gravelly sandy clay loam	3e-9	3e-9
Boxrobber cobbly sandy clay loam	7e-7	7e-7
662:		
Millerridge gravelly sandy clay loam	4e-9	4e-9
Boxrobber cobbly sandy clay loam	7e-7	7e-7
663:		
Millerridge gravelly sandy clay loam	6e-9	6e-9
Boxrobber cobbly sandy clay loam	7e-7	7e-7
664:		
Millerridge gravelly sandy clay loam	7e-9	7e-9
Boxrobber cobbly sandy clay loam	7e-7	7e-7
665:		
Surnuf gravelly loam	3e-1	3e-1
Bigridge loam	3e-1	3e-1
666:		
Surnuf gravelly loam	4e-1	4e-1
Bigridge loam	4e-1	4e-1
667:		
Surnuf gravelly loam	6e-1	6e-1
Bigridge loam	6e-1	6e-1
668:		
Surnuf gravelly loam	7e-1	7e-1
Bigridge loam	7e-1	7e-1
669:		
Oroshore gravelly loam	3e-1	3e-1
Mounthope loam	3e-1	3e-1
Dunstone gravelly loam	7e-1	7e-1
670:		
Oroshore gravelly loam	4e-1	4e-1
Mounthope loam	4e-1	4e-1
Dunstone gravelly loam	7e-1	7e-1
671:		
Oroshore gravelly loam	6e-1	6e-1
Mounthope loam	6e-1	6e-1
Dunstone gravelly loam	7e-1	7e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
672:		
Oroshore gravelly loam	7e-1	7e-1
Mounthope loam	7e-1	7e-1
Dunstone gravelly loam	7e-1	7e-1
674:		
Chawanakee gravelly sandy loam	8	8
Bonneyridge sandy loam	8	8
Rock outcrop, quartz diorite	8	8
675:		
Clearhayes sandy clay loam	5w-2	5w-2
Hamslough clay	5w-2	5w-2
676:		
Carhart clay	5w-2	5w-2
Anita taxadjunct clay	7w-2	7w-2
677:		
Tuscan gravelly loam	7s-8	7s-8
Fallager loam	8	8
Anita, gravelly duripan	7w-2	7w-2
679:		
Lucksev loam	6e-1	6e-1
Butteside gravelly loam	3e-1	3e-1
Carhart clay	5w-2	5w-2
680:		
Lucksev loam	6e-1	6e-1
Butteside gravelly loam	6e-1	6e-1
683:		
Typic Haploxeralfs, magnesic, low elevation	7e-9	7e-9
Earlal very gravelly loam	7e-9	7e-9
Rock outcrop, serpentinite	8	8
684:		
Typic Haploxeralfs, magnesic, low elevation	7e-9	7e-9
Earlal very gravelly loam	7e-9	7e-9
Rock outcrop, serpentinite	8	8
685:		
Bosquejo taxadjunct, gravelly substratum	5w-5	5w-5
686:		
Redsluff taxadjunct clay loam	3s-11	2s-11

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
687:		
Xerorthents, shallow	7s-8	7s-8
Typic Haploxeralfs gravelly loam	3e-1	3e-1
700:		
Retsongulch very gravelly sandy loam	8	8
Flumewall gravelly sandy loam	7e-1	7e-1
701:		
Powellton gravelly loam	7e-1	7e-1
Obstruction gravelly sandy loam	7e-1	7e-1
702:		
Cerpone gravelly loam	3e-9	3e-9
Typic Haploxeralfs, magnesic, very gravelly loam	7e-9	7e-9
Earlal very gravelly loam	7e-9	7e-9
703:		
Cerpone gravelly loam	4e-9	4e-9
Typic Haploxeralfs, magnesic, very gravelly loam	7e-9	7e-9
Earlal very gravelly loam	7e-9	7e-9
Rock outcrop, serpentinite	8	8
704:		
Typic Haploxeralfs, magnesic, very gravelly loam	7e-9	7e-9
Earlal very gravelly loam	7e-9	7e-9
Cerpone gravelly loam	6e-9	6e-9
Rock outcrop, serpentinite	8	8
705:		
Typic Haploxeralfs, magnesic, very gravelly loam	7e-9	7e-9
Earlal very gravelly loam	7e-9	7e-9
Cerpone gravelly loam	7e-9	7e-9
Rock outcrop, serpentinite	8	8
711:		
Dixmine very gravelly loam	3e-1	3e-1
Toadtown loam	3e-1	3e-1
712:		
Dixmine very gravelly loam	4e-1	4e-1
Toadtown loam	4e-1	4e-1
713:		
Dixmine very gravelly loam	6e-1	6e-1
Toadtown loam	6e-1	6e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
714:		
Dixmine very gravelly loam	7e-1	7e-1
Toadtown loam	7e-1	7e-1
715:		
Logtrain gravelly loam	8	8
Bottlehill very gravelly loam	8	8
Walkermine very gravelly loam	8	8
716:		
Griffgulch very gravelly silt loam	3e-1	3e-1
Surnuf gravelly loam	3e-1	3e-1
717:		
Griffgulch very gravelly silt loam	4e-1	4e-1
Surnuf gravelly loam	4e-1	4e-1
718:		
Griffgulch very gravelly silt loam	6e-1	6e-1
Surnuf gravelly loam	6e-1	6e-1
Spine taxadjunct very cobbly loam	7e-8	7e-8
719:		
Griffgulch very gravelly silt loam	7e-1	7e-1
Surnuf gravelly loam	7e-1	7e-1
Spine taxadjunct very cobbly loam	7e-8	7e-8
720:		
Dystroxerepts extremely gravelly loam	8	8
Haploxeralfs very gravelly loam	8	8
Rock outcrop, metavolcanic	8	8
721:		
Haploxerands, granitic till, medial sandy loam	4e-1	4e-1
722:		
Haploxerands, granitic till, medial sandy loam	6e-1	6e-1
723:		
Haploxerands, granitic till, medial sandy loam	7e-1	7e-1
724:		
Haploxerands, volcanic till, cobbly medial sandy loam	3e-1	3e-1
725:		
Haploxerands, volcanic till, cobbly medial sandy loam	4e-1	4e-1
726:		
Haploxerands, volcanic till, cobbly medial sandy loam	6e-1	6e-1
727:		
Bonneyridge sandy loam	4e-4	4e-4

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
728:		
Bonneyridge sandy loam	6e-1	6e-1
729:		
Bonneyridge sandy loam	7e-1	7e-1
730:		
Tusccoll gravelly loam	6e-1	6e-1
Schott very gravelly loam	6e-1	6e-1
731:		
Tusccoll gravelly loam	7e-1	7e-1
Schott very gravelly loam	7e-1	7e-1
732:		
Bonepile taxadjunct, duripan substratum	4e-3	4e-3
733:		
Haploxeralfs, terrace, gravelly loam	3e-7	3e-7
734:		
Haploxerands medial sandy loam	3e-1	3e-1
Aquic Xerofluvents peaty very fine sandy loam	5w-2	5w-2
735:		
Fluvaquents, loamy	5w-2	5w-2
801:		
Obstruction gravelly sandy loam	3e-1	3e-1
802:		
Obskel very gravelly sandy loam	4e-1	4e-1
Obstruction gravelly sandy loam	4e-1	4e-1
803:		
Obskel very gravelly sandy loam	6e-1	6e-1
Obstruction gravelly sandy loam	6e-1	6e-1
804:		
Obskel very gravelly sandy loam	7e-1	7e-1
Obstruction gravelly sandy loam	7e-1	7e-1
Retsongulch very gravelly sandy loam	7e-1	7e-1
805:		
Bottlehill very gravelly loam	4e-4	4e-4
Walkermine very gravelly loam	8	8
Logtrain gravelly loam	3e-1	3e-1
806:		
Bottlehill very gravelly loam	4e-1	4e-1
Walkermine very gravelly loam	8	8
Logtrain gravelly loam	4e-1	4e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
807:		
Bottlehill very gravelly loam	6e-1	6e-1
Logtrain gravelly loam	6e-1	6e-1
Walkermine very gravelly loam	8	8
808:		
Bottlehill very gravelly loam	7e-1	7e-1
Walkermine very gravelly loam	8	8
Logtrain gravelly loam	7e-1	7e-1
809:		
Walkermine very gravelly loam	8	8
Bottlehill very gravelly loam	8	8
Logtrain gravelly loam	8	8
Rock outcrop, metavolcanic	8	8
810:		
Dixmine very gravelly loam	6e-1	6e-1
Mac gravelly loam	6e-1	6e-1
Spine very gravelly loam	7e-8	7e-8
811:		
Powellton gravelly loam	3e-1	3e-1
Toadtown loam	3e-1	3e-1
812:		
Powellton gravelly loam	4e-1	4e-1
Toadtown loam	4e-1	4e-1
813:		
Powellton gravelly loam	6e-1	6e-1
Toadtown loam	6e-1	6e-1
814:		
Mountyana gravelly loam	3e-1	3e-1
815:		
Mountyana gravelly loam	4e-1	4e-1
817:		
Lydon very gravelly medial coarse sandy loam	4e-1	4e-1
818:		
Lydon very gravelly medial coarse sandy loam	4e-1	4e-1
819:		
Lydon very gravelly medial coarse sandy loam	7e-1	7e-1
Rock outcrop, mudflow breccia	8	8

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
820:		
Lydon very gravelly medial coarse sandy loam-----	7e-1	7e-1
Rock outcrop, mudflow breccia----------	8	8
821:		
Lydon very gravelly medial coarse sandy loam-----	8	8
Rock outcrop, mudflow breccia----------	8	8
822:		
Bonepile gravelly medial loam----------	3e-1	3e-1
823:		
Bonepile gravelly medial loam----------	4e-1	4e-1
824:		
Beecee very gravelly medial loam----------	6e-1	6e-1
825:		
Beecee very gravelly medial loam----------	7e-1	7e-1
Lydon very gravelly medial coarse sandy loam-----	7e-1	7e-1
826:		
Redbone gravelly medial sandy loam----------	3e-1	3e-1
827:		
Redbone gravelly medial sandy loam----------	4e-1	4e-1
829:		
Paradiso loam----------	3e-1	3e-1
830:		
Paradiso loam----------	4e-1	4e-1
831:		
Surnuf gravelly loam----------	3e-1	3e-1
Bigridge loam----------	3e-1	3e-1
Spine very gravelly loam----------	7e-8	7e-8
832:		
Surnuf gravelly loam----------	4e-1	4e-1
Bigridge loam----------	4e-1	4e-1
Spine very gravelly loam----------	7e-8	7e-8
833:		
Surnuf gravelly loam----------	6e-1	6e-1
Bigridge loam----------	6e-1	6e-1
Spine very gravelly loam----------	7e-8	7e-8
834:		
Hietanen gravelly loam----------	3e-1	3e-1
Mac gravelly loam----------	3e-1	3e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
835:		
Hietanen gravelly loam	4e-1	4e-1
Mac gravelly loam	4e-1	4e-1
836:		
Hietanen gravelly loam	6e-1	6e-1
Mac gravelly loam	6e-1	6e-1
Spine very gravelly loam	7e-8	7e-8
837:		
Hietanen gravelly loam	7e-1	7e-1
Spine very gravelly loam	7e-8	7e-8
Mac gravelly loam	7e-1	7e-1
838:		
Dixmine very gravelly loam	7e-1	7e-1
Spine very gravelly loam	7e-8	7e-8
Mac gravelly loam	7e-1	7e-1
839:		
Chawanakee gravelly sandy loam	7e-1	7e-1
Billscabin gravelly sandy loam	4e-1	4e-1
841:		
Billscabin gravelly sandy loam	7e-1	7e-1
Bonneyridge sandy loam	7e-1	7e-1
842:		
Billscabin gravelly sandy loam	8	8
Bonneyridge sandy loam	8	8
846:		
Bonneyridge sandy loam	4e-1	4e-1
Lewisflat loam	3e-1	3e-1
847:		
Bonneyridge sandy loam	6e-1	6e-1
Lewisflat loam	4e-1	4e-1
848:		
Bonneyridge sandy loam	7e-1	7e-1
Lewisflat loam	6e-1	6e-1
850:		
Lewisflat loam	3e-1	3e-1
851:		
Lewisflat loam	4e-1	4e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
852:		
Lewisflat loam	6e-1	6e-1
860:		
Toadtown gravelly loam	3e-1	3e-1
Powellton silt loam	3e-1	3e-1
861:		
Toadtown gravelly loam	4e-1	4e-1
Powellton silt loam	4e-1	4e-1
862:		
Toadtown gravelly loam	6e-1	6e-1
Powellton silt loam	6e-1	6e-1
863:		
Toadtown gravelly loam	7e-1	7e-1
Powellton silt loam	7e-1	7e-1
880:		
Sites taxadjunct gravelly loam	3e-1	3e-1
Jocal taxadjunct gravelly loam	3e-1	3e-1
881:		
Sites taxadjunct gravelly loam	4e-1	4e-1
Jocal taxadjunct gravelly loam	4e-1	4e-1
882:		
Sites taxadjunct gravelly loam	6e-1	6e-1
Jocal taxadjunct gravelly loam	6e-1	6e-1
883:		
Sites taxadjunct gravelly loam	7e-1	7e-1
Jocal taxadjunct gravelly loam	7e-1	7e-1
885:		
Rogerville silt loam	3e-1	3e-1
886:		
Rogerville silt loam	4e-1	4e-1
892:		
Rogerville silt loam	7e-1	7e-1
893:		
Rogerville silt loam	6e-1	6e-1
902:		
Lava flows, Lovejoy basalt	8	8
Lumpkin gravelly medial sandy loam	8	8

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
903:		
Mudwash gravelly medial sandy loam	4e-1	4e-1
Timberisland very gravelly medial sandy loam	7e-1	7e-1
Lavatop gravelly medial fine sandy loam	7e-1	7e-1
904:		
Lava flows, Lovejoy basalt	8	8
Lavatop gravelly medial fine sandy loam	7e-1	7e-1
905:		
Lava flows, Lovejoy basalt	8	8
Lumpkin gravelly medial sandy loam	8	8
906:		
Lava flows, Lovejoy basalt	8	8
Lumpkin gravelly medial sandy loam	8	8
911:		
Endoaquolls loam	5w-2	5w-2
923:		
Powderhouse medial sandy loam	6e-1	6e-1
McNair medial coarse sandy loam	3e-1	3e-1
Greenwell medial sandy loam	6e-1	6e-1
924:		
Powderhouse medial sandy loam	6e-1	6e-1
McNair medial coarse sandy loam	4e-1	4e-1
Greenwell medial sandy loam	6e-1	6e-1
925:		
Powderhouse medial sandy loam	6e-1	6e-1
McNair medial coarse sandy loam	6e-1	6e-1
Greenwell medial sandy loam	6e-1	6e-1
930:		
Shakeridge gravelly medial coarse sandy loam	6e-1	6e-1
Timberisland very gravelly medial sandy loam	7e-1	7e-1
931:		
Shakeridge gravelly medial coarse sandy loam	6e-1	6e-1
Mudwash gravelly medial sandy loam	4e-1	4e-1
Timberisland very gravelly medial sandy loam	7e-1	7e-1
932:		
Shakeridge gravelly medial coarse sandy loam	6e-1	6e-1
Mudwash gravelly medial sandy loam	6e-1	6e-1

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
933:		
Shakeridge gravelly medial coarse sandy loam-----	7e-1	7e-1
934:		
Mudwash gravelly medial sandy loam----------	3e-1	3e-1
939:		
Fluvaquentic Humaquepts very fine sandy loam-----	5w-2	5w-2
940:		
Dejonah gravelly loam----------	3e-1	3e-1
Stagpoint loam----------	3e-1	3e-1
941:		
Dejonah gravelly loam----------	4e-1	4e-1
Stagpoint loam----------	4e-1	4e-1
942:		
Stagpoint loam----------	6e-1	6e-1
Dejonah gravelly loam----------	6e-1	6e-1
948:		
Stagpoint loam----------	7e-1	7e-1
Dejonah gravelly loam----------	7e-1	7e-1
949:		
Rogerville taxadjunct fine sandy loam----------	6e-1	6e-1
950:		
Lumpkin taxadjunct very gravelly medial very fine sandy loam----------	8	8
Rock outcrop, olivine basalt, andesite, or mudflow----------	8	8
Powderhouse medial sandy loam----------	6e-1	6e-1
951:		
Lumpkin taxadjunct very gravelly medial very fine sandy loam----------	8	8
Rock outcrop, andesite----------	8	8
Powderhouse medial sandy loam----------	6e-1	6e-1
960:		
Surnuf gravelly loam, high elevation----------	2e-1	2e-1
961:		
Surnuf gravelly loam, high elevation----------	3e-1	3e-1
962:		
Surnuf gravelly loam, high elevation----------	4e-1	4e-1
963:		
Surnuf gravelly loam, high elevation----------	6e-1	6e-1
990:		
Riverwash, frequently flooded----------	8	8

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land capability	
	N	I
991:		
Xerofluvents sandy loam, frequently flooded	6w-2	6w-2
995:		
Pits, gravel	8	8
996:		
Dumps, excavated material	8	8
997:		
Pits	8	8
998:		
Dumps, landfill	8	8
999.		
Water		
DAM.		
Dam, manmade		

Table 6.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Map unit name
104	Bosquejo clay, 0 to 1 percent slopes (where irrigated)
105	Busacca clay loam, 0 to 1 percent slopes (where irrigated)
109	Bosquejo clay loam, 0 to 1 percent slopes (where irrigated)
110	Bosquejo silt loam, 0 to 1 percent slopes, overwash, occasionally flooded (where irrigated)
121	Boga-Loemstone complex, 0 to 1 percent slopes (where irrigated)
126	Liveoak sandy loam, 0 to 2 percent slopes (where irrigated)
138su	Liveoak sandy clay loam, 0 to 2 percent slopes (where irrigated)
150su	Olashes sandy loam, 0 to 2 percent slopes (where irrigated)
158	Gianella fine sandy loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
160	Gianella loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
161	Gianella fine sandy loam, 0 to 1 percent slopes, rarely flooded (where irrigated)
162	Gianella loam, 0 to 1 percent slopes, rarely flooded (where irrigated)
163yu	Holillipah loamy sand, 0 to 1 percent slopes, frequently flooded (where irrigated and either protected from flooding or not frequently flooded during the growing season)
175	Farwell clay loam, 0 to 1 percent slopes (where irrigated)
176	Farwell loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
177	Farwell silt loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
178	Arbuckle gravelly loam, 0 to 2 percent slopes (where irrigated)
180	Dodgeland silty clay loam, 0 to 5 percent slopes, occasionally flooded (where irrigated)
189	Esquon silt loam, 0 to 1 percent slopes, overwash (where irrigated)
200	Parrott silt loam, 0 to 2 percent slopes, occasionally flooded (where irrigated)
203	Kusalslough silty clay loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
221yu	Sites loam, 3 to 8 percent slopes (where irrigated)
225yu	Sites gravelly loam, bedrock substratum, 3 to 8 percent slopes (where irrigated)
248yu	Trainer loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
250	Llanoseco silty clay loam, 0 to 2 percent slopes, occasionally flooded (where irrigated)
252	Whitecabin-Ordferry silty clays, 0 to 1 percent slopes, occasionally flooded (where irrigated)
255	Whitecabin-Ordferry complex, 0 to 1 percent slopes, occasionally flooded (where irrigated)
256	Whitecabin silt loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
258	Codora silty clay loam, 0 to 1 percent slopes, occasionally flooded (where irrigated)
290	Perkins gravelly loam, 0 to 2 percent slopes (where irrigated)
300	Redsluff gravelly loam, 0 to 2 percent slopes (where irrigated)
330	Wilsoncreek-Trainer loams, 0 to 2 percent slopes, occasionally flooded (where irrigated)
338	Oxyaquic Xerofluvents silt loam, 0 to 1 percent slopes (where irrigated)
415	Ignord fine sandy loam, 0 to 2 percent slopes (where irrigated)
418	Almendra loam, 0 to 1 percent slopes (where irrigated)
419	Conejo fine sandy loam, 0 to 1 percent slopes, overwash (where irrigated)
420	Conejo clay loam, 0 to 1 percent slopes (where irrigated)
425	Vina fine sandy loam, 0 to 1 percent slopes (where irrigated)
426	Vina loam, 0 to 1 percent slopes (where irrigated)
441	Oxyaquic Xerofluvents very fine sandy loam, 0 to 1 percent slopes (where irrigated)
445	Chico loam, 0 to 1 percent slopes (where irrigated)
447	Charger fine sandy loam, 0 to 1 percent slopes (where irrigated)
448	Haploxerolls clay loam, 0 to 2 percent slopes (where irrigated)
449	Haploxerolls loam, 0 to 2 percent slopes (where irrigated)
500	Lofgren-Blavo complex, 0 to 1 percent slopes (where irrigated)
501	Lofgren-Blavo complex, 0 to 1 percent slopes, occasionally flooded (where irrigated)
519	Edjobe silty clay, 0 to 1 percent slopes (where irrigated)
520	Esquon-Neerdobe complex, 0 to 1 percent slopes (where irrigated)

Table 7.--Farmland of Statewide Importance

(Urban or built-up areas within the map units listed below are not considered farmland of statewide importance)

Map symbol	Map unit name
120	Gridley taxadjunct clay loam, 0 to 2 percent slopes
125	Gridley taxadjunct-Calcic Haploxerolls complex, 0 to 2 percent slopes
127	Gridley taxadjunct loam, 0 to 2 percent slopes
130	Eastbiggs loam, 0 to 2 percent slopes
133	Eastbiggs-Galt complex, 0 to 3 percent slopes
143su	Marcum-Gridley clay loams, 0 to 1 percent slopes
179	Moda taxadjunct-Arbuckle complex, 0 to 2 percent slopes
222yu	Sites loam, 8 to 15 percent slopes
226yu	Sites gravelly loam, bedrock substratum, 8 to 15 percent slopes
260	Ordferry silty clay, 0 to 1 percent slopes, occasionally flooded
310	Kimball loam, 1 to 3 percent slopes
317	Thompsonflat loam, 2 to 15 percent slopes
318	Thompsonflat-Oroville complex, 0 to 9 percent slopes
416	Calcic Haploxerolls, 0 to 1 percent slopes
442	Durixerolls-Haploxerolls clay loams, 0 to 2 percent slopes
443	Durixerolls-Haploxerolls loams, 0 to 2 percent slopes
502	Blavo silt loam, 0 to 1 percent slopes, overwash, occasionally flooded
521	Neerdobe silt loam, 0 to 1 percent slopes, overwash
528	Neerdobe clay loam, 0 to 1 percent slopes

Table 8.--Storie Index

(The California Storie Index expresses numerically the relative degree of suitability of a soil for general intensive agricultural uses at the time of evaluation. The rating is based on soil characteristics only and is obtained by evaluating such factors as soil depth, texture of the surface soil, subsoil characteristics, and surface relief. The ratings shown are for soils that are used to produce the commonly grown crops or for livestock grazing)

Map symbol and soil name	Storie index	Storie grade
100:		
Anita clay	3	Grade six - nonagricultural
Galt clay	10	Grade five - very poor
104:		
Bosquejo clay	35	Grade four - poor
105:		
Busacca clay loam	76	Grade two - good
108:		
Tuscan gravelly loam	6	Grade six - nonagricultural
Igo gravelly loam	5	Grade six - nonagricultural
Anita clay	3	Grade six - nonagricultural
109:		
Bosquejo clay loam	62	Grade two - good
110:		
Bosquejo silt loam, overwash, occasionally flooded	69	Grade two - good
118:		
Xerorthents, tailings	34	Grade four - poor
118co:		
Clear Lake clay, frequently flooded	24	Grade four - poor
119:		
Xerorthents, tailings	37	Grade four - poor
Urban land.		
120:		
Gridley taxadjunct clay loam	15	Grade five - very poor
121:		
Boga loam	84	Grade one - excellent
Loemstone loam	54	Grade three - fair
121su:		
Columbia fine sandy loam, frequently flooded	58	Grade three - fair

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
125:		
Gridley taxadjunct loam	17	Grade five - very poor
Calcic Haploxerolls sandy loam	67	Grade two - good
126:		
Liveoak sandy loam	84	Grade one - excellent
127:		
Gridley taxadjunct loam	17	Grade five - very poor
130:		
Eastbiggs loam	22	Grade four - poor
133:		
Eastbiggs loam	21	Grade four - poor
Galt clay loam	18	Grade five - very poor
136:		
Duric Xerarents, cut	15	Grade five - very poor
Duric Xerarents, fill	63	Grade two - good
Eastbiggs fine sandy loam, leveled	24	Grade four - poor
138su:		
Liveoak sandy clay loam	84	Grade one - excellent
139su:		
Liveoak taxadjunct loam, frequently flooded	58	Grade three - fair
Galt taxadjunct clay loam, frequently flooded	16	Grade five - very poor
143su:		
Marcum clay loam	43	Grade three - fair
Gridley clay loam	38	Grade four - poor
150:		
Columbia stratified sand to fine sandy loam	35	Grade four - poor
150su:		
Olashes sandy loam	93	Grade one - excellent
152:		
Gianella fine sandy loam, frequently flooded	66	Grade two - good
153:		
Gianella sandy loam, frequently flooded	63	Grade two - good
154:		
Gianella silt loam, frequently flooded	66	Grade two - good

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
158:		
Gianella fine sandy loam, occasionally flooded---	80	Grade one - excellent
160:		
Gianella loam, occasionally flooded----------	80	Grade one - excellent
161:		
Gianella fine sandy loam, rarely flooded---------	85	Grade one - excellent
162:		
Gianella loam, rarely flooded----------	85	Grade one - excellent
163yu:		
Holillipah loamy sand----------	47	Grade three - fair
175:		
Farwell clay loam, rarely flooded----------	75	Grade two - good
176:		
Farwell loam, occasionally flooded----------	79	Grade two - good
177:		
Farwell silt loam, occasionally flooded----------	79	Grade two - good
178:		
Arbuckle gravelly loam----------	71	Grade two - good
179:		
Moda taxadjunct loam----------	14	Grade five - very poor
Arbuckle gravelly loam----------	71	Grade two - good
180:		
Dodgeland silty clay loam, occasionally flooded--	43	Grade three - fair
181:		
Dodgeland silty clay loam, frequently flooded----	43	Grade three - fair
189:		
Esquon silt loam, overwash----------	49	Grade three - fair
200:		
Parrott silt loam, occasionally flooded----------	83	Grade one - excellent
201:		
Parrott silt loam, frequently flooded----------	65	Grade two - good
203:		
Kusalslough silty clay loam, occasionally flooded	62	Grade two - good
205:		
Parrott silt loam, frequently flooded----------	65	Grade two - good
Vermet silt loam, frequently flooded----------	34	Grade four - poor

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
220:		
Esquon clay, frequently flooded	24	Grade four - poor
Clear Lake silty clay loam, overwash	31	Grade four - poor
248yu:		
Trainer loam	69	Grade two - good
250:		
Llanoseco, occasionally flooded	63	Grade two - good
252:		
Whitecabin silty clay, occasionally flooded	26	Grade four - poor
Ordferry silty clay, occasionally flooded	10	Grade five - very poor
255:		
Whitecabin silty clay loam, occasionally flooded	44	Grade three - fair
Ordferry silty clay, occasionally flooded	10	Grade five - very poor
256:		
Whitecabin silt loam, occasionally flooded	49	Grade three - fair
257:		
Llanoseco, frequently flooded	53	Grade three - fair
258:		
Codora, occasionally flooded	62	Grade two - good
260:		
Ordferry silty clay, occasionally flooded	10	Grade five - very poor
280:		
Columbia taxadjunct stratified very fine sandy loam	49	Grade three - fair
290:		
Perkins gravelly loam	53	Grade three - fair
300:		
Redsluff gravelly loam	52	Grade three - fair
301:		
Wafap gravelly loam	24	Grade four - poor
Hamslough clay	5	Grade six - nonagricultural
302:		
Redtough loam	11	Grade five - very poor
Redswale cobbly loam	4	Grade six - nonagricultural
303:		
Munjar gravelly loam	21	Grade four - poor

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
303:		
Tuscan taxadjunct gravelly clay loam	15	Grade five - very poor
Galt clay	10	Grade five - very poor
304:		
Redtough loam	12	Grade five - very poor
305:		
Redtough gravelly loam	39	Grade four - poor
Redswale loam	39	Grade four - poor
Anita, gravelly duripan	12	Grade five - very poor
306:		
Duric Xerarents, fill	34	Grade four - poor
Duric Xerarents, cut	14	Grade five - very poor
307:		
Duric Xerarents clay loam, leveled	11	Grade five - very poor
310:		
Kimball loam	58	Grade three - fair
317:		
Thompsonflat loam	83	Grade one - excellent
318:		
Thompsonflat fine sandy loam	83	Grade one - excellent
Oroville gravelly fine sandy loam	7	Grade six - nonagricultural
320:		
Vistarobles sandy loam	10	Grade six - nonagricultural
Redding loam	32	Grade four - poor
321:		
Durixeralfs, fine-loamy, gravelly fine sandy loam	35	Grade four - poor
Durixeralfs, loamy-skeletal, gravelly fine sandy loam	13	Grade five - very poor
Typic Petraquepts silty clay	12	Grade five - very poor
330:		
Wilsoncreek loam, occasionally flooded	79	Grade two - good
Trainer loam, occasionally flooded	69	Grade two - good

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
331:		
Thompsonflat loam	69	Grade two - good
335:		
Galt clay loam	18	Grade five - very poor
336:		
Galt clay	10	Grade five - very poor
337:		
Galt clay loam	18	Grade five - very poor
338:		
Oxyaquic Xerofluvents silt loam	70	Grade two - good
339:		
Oxyaquic Xerofluvents sandy loam, frequently flooded	56	Grade three - fair
360:		
Typic Xerofluvents, coarse-loamy	46	Grade three - fair
Typic Xerofluvents, sandy-skeletal	46	Grade three - fair
375:		
Wickscorner loam	83	Grade one - excellent
376:		
Flagcanyon gravelly loam	43	Grade three - fair
Wickscorner loam	86	Grade one - excellent
377:		
Flagcanyon taxadjunct fine sandy loam	48	Grade three - fair
Durixeralfs clayey-skeletal loam	34	Grade four - poor
Duraquerts gravelly clay	11	Grade five - very poor
400:		
Subaco taxadjunct clay	15	Grade five - very poor
415:		
Ignord fine sandy loam	85	Grade one - excellent
416:		
Calcic Haploxerolls sandy loam	67	Grade two - good
418:		
Almendra loam	94	Grade one - excellent
419:		
Conejo fine sandy loam, overwash	89	Grade one - excellent

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
420:		
Conejo clay loam	85	Grade one - excellent
425:		
Vina fine sandy loam	85	Grade one - excellent
426:		
Vina loam	93	Grade one - excellent
439:		
Oxyaquic Xerofluvents clay	24	Grade four - poor
440:		
Oxyaquic Xerofluvents silt loam, frequently flooded	58	Grade three - fair
441:		
Oxyaquic Xerofluvents very fine sandy loam	70	Grade two - good
442:		
Durixerolls clay loam	45	Grade three - fair
Haploxerolls clay loam	76	Grade two - good
443:		
Durixerolls loam	40	Grade three - fair
Haploxerolls loam	84	Grade one - excellent
445:		
Chico loam	94	Grade one - excellent
447:		
Charger fine sandy loam	84	Grade one - excellent
448:		
Haploxerolls clay loam	76	Grade two - good
449:		
Haploxerolls loam	84	Grade one - excellent
500:		
Lofgren clay	17	Grade five - very poor
Blavo clay	7	Grade six - nonagricultural
501:		
Lofgren clay, occasionally flooded	17	Grade five - very poor
Blavo clay, occasionally flooded	7	Grade six - nonagricultural

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
502:		
Blavo silt loam, overwash, occasionally flooded--	14	Grade five - very poor
519:		
Edjobe silty clay----------	29	Grade four - poor
520:		
Esquon clay----------	24	Grade four - poor
Neerdobe clay----------	10	Grade five - very poor
521:		
Neerdobe silt loam, overwash----------	24	Grade four - poor
522:		
Clear Lake silty clay loam, overwash----------	31	Grade four - poor
523:		
Esquon silty clay loam, overwash----------	47	Grade three - fair
525:		
Govstanford loam----------	52	Grade three - fair
526:		
Govstanford loam, occasionally flooded----------	52	Grade three - fair
528:		
Neerdobe clay loam----------	13	Grade five - very poor
590:		
Vistarobles sandy loam----------	10	Grade six - nonagricultural
Redding loam----------	32	Grade four - poor
Argonaut taxadjunct loam----------	49	Grade three - fair
Haploxererts gravelly silty clay----------	17	Grade five - very poor
603:		
Oroville gravelly fine sandy loam----------	7	Grade six - nonagricultural
Thermalito sandy loam----------	22	Grade four - poor
Fernandez sandy loam----------	84	Grade one - excellent
Thompsonflat fine sandy loam----------	83	Grade one - excellent
605:		
Duric Xerarents fine sandy loam, leveled---------	12	Grade five - very poor
Oroville gravelly fine sandy loam----------	7	Grade six - nonagricultural

Table 8.--Storie Index--Continued

Map symbol and soil name	Storie index	Storie grade
606:		
Redtough loam	11	Grade five - very poor
Fallager loam	5	Grade six - nonagricultural
Anita, gravelly duripan	2	Grade six - nonagricultural
609:		
Anita, gravelly duripan	3	Grade six - nonagricultural
Tuscan taxadjunct gravelly clay loam	15	Grade five - very poor
675:		
Clearhayes sandy clay loam	55	Grade three - fair
Hamslough clay	15	Grade five - very poor
677:		
Tuscan gravelly loam	23	Grade four - poor
Fallager loam	22	Grade four - poor
Anita, gravelly duripan	9	Grade six - nonagricultural
685:		
Bosquejo taxadjunct gravelly substratum	34	Grade four - poor
686:		
Redsluff taxadjunct clay loam	80	Grade two - good

Table 9.--Hydric Soils

(This table lists the map units in the survey area that include hydric soils. Only the hydric components are shown. The (C) component, and the (I) indicates a minor component. See text for an explanation of the hydric criteria codes)

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
100:							
Anita-Galt complex, 0 to 3 percent slopes	(C) Anita clay	Hydric	drainageways and depressions on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	60	
	(C) Galt clay	Hydric	drainageways and depressions on fan terraces	2B3,3	Farmable under natural conditions	25	
	(I) Bosquejo clay	Hydric	drainageways and depressions on fan terraces	3	Farmable under natural conditions	0-3	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on fan terraces	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Anita taxadjunct clay	Hydric	toeslopes on volcanic ridges	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that have a gravelly duripan	Hydric	fan terraces	3	Neither wooded nor farmable under natural conditions	0-2	
104:							
Bosquejo clay, 0 to 1 percent slopes	(I) Galt clay	Hydric	fan terraces	3	Farmable under natural conditions	0-3	
	(I) Edjobe silty clay	Hydric	flood basins	3	Farmable under natural conditions	0-1	
105:							
Busacca clay loam, 0 to 1 percent slopes	(I) Edjobe silty clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
108:							
Tuscan-Igo-Anita complex, 0 to 3 percent slopes	(C) Anita clay	Hydric	depressions and swales on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	
118:							
Xerorthents, tailings, 0 to 50 percent slopes	(C) Xerorthents, tailings	Hydric	stream terraces and flood plains	4	Wooded under natural conditions	80	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Soils that are in riparian areas	Hydric	flood plains	4	Wooded under natural conditions	0-5	
	(I) Water-filled pits	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	0-5	
	(I) Xerofluvents, tailings	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Xeropsamments, tailings	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils that have a duripan	Hydric	edges of terraces	4	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
118co:							
Clear Lake clay, 0 to 2 percent slopes, frequently flooded	(C) Clear Lake clay, frequently flooded	Hydric	flood basins	2B3,4	Farmable under natural conditions	90	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Willows silty clay, frequently flooded	Hydric	flood basins	2B3,4	Farmable under natural conditions	0-6	
	(I) Clear Lake clay, occasionally flooded	Hydric	flood basins	2B3,4	Farmable under natural conditions	0-2	
	(I) Soils in channels	Hydric	channels	4	Wooded under natural conditions	0-2	
119:							
Xerorthents, tailings-Urban land complex, 0 to 2 percent slopes	(C) Xerorthents, tailings	Hydric	terraces and flood plains	4	Wooded under natural conditions	70	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
120:							
Gridley taxadjunct clay loam, 0 to 2 percent slopes	(I) Neerdobe clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Subaco taxadjunct clay	Hydric	flood basins	3	Farmable under natural conditions	0-2	
121su:							
Columbia fine sandy loam, 0 to 2 percent slopes, frequently flooded	(C) Columbia fine sandy loam, frequently flooded	Hydric	flood plains	4	Farmable under natural conditions	80	
	(I) Holillipah	Hydric	flood plains	4	Farmable under natural conditions	0-7	
	(I) Shanghai	Hydric	flood plains	4	Farmable under natural conditions	0-6	
125:							
Gridley taxadjunct-Calcic Haploxerolls complex, 0 to 2 percent slopes	(I) Subaco taxadjunct clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
127:							
Gridley taxadjunct loam, 0 to 2 percent slopes	(I) Soils that are frequently flooded	Hydric	channels on low terraces	3	Farmable under natural conditions	0-5	
130:							
Eastbiggs loam, 0 to 2 percent slopes	(I) Galt clay	Hydric	swales on low terraces	2B3,3	Farmable under natural conditions	0-9	
	(I) Clayey soils 10 to 20 inches deep to a duripan	Hydric	swales on low terraces	3	Farmable under natural conditions	0-3	
	(I) Loamy soils 10 to 20 inches deep to a duripan	Hydric	swales on low terraces	3	Farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on low terraces	3	Farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Alter
133:							
Eastbiggs-Galt complex, 0 to 3 percent slopes	(C) Galt clay loam	Hydric	drainageways and depressions on low terraces	2B3,3	Farmable under natural conditions	40	Drainage ditches depth to ditches, construc natural patterns depth, f
	(I) Esquon clay	Hydric	drainageways and small basins on low terraces	3	Farmable under natural conditions	0-3	
	(I) Wet soils	Hydric	stream terraces	2B3	Neither wooded nor farmable under natural conditions	0-2	
136:							
Duric Xerarents-Eastbiggs complex, 0 to 1 percent slopes, leveled	(C) Duric Xerarents, cut	Hydric	cut areas on low terraces	3	Farmable under natural conditions	35	Drainage ditches depth to ditches, construc natural patterns depth, f
	(I) Esquon (human-transported fill overburden)	Hydric	filled drainages and sloughs on low terraces	3	Farmable under natural conditions	0-3	
139su:							
Liveoak-Galt taxadjuncts complex, 0 to 2 percent slopes, frequently flooded	(C) Liveoak taxadjunct loam, frequently flooded	Hydric	bars on flood plains	4	Farmable under natural conditions	45	
	(C) Galt taxadjunct clay loam, frequently flooded	Hydric	channels on flood plains	4	Farmable under natural conditions	40	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
139su (continued):							
	(I) Galt clay	Hydric	flood plains	3,4	Farmable under natural conditions	0-4	
	(I) Subaco clay	Hydric	flood basins	3	Farmable under natural conditions	0-3	
	(I) Clear Lake clay	Hydric	flood basins	3,4	Farmable under natural conditions	0-2	
	(I) Columbia	Hydric	flood plains	4	Farmable under natural conditions	0-2	
	(I) Soils that are less than 20 inches deep to a duripan	Hydric	flood plains	4	Farmable under natural conditions	0-2	
143su:							
Marcum-Gridley clay loams, 0 to 1 percent slopes	(I) Capay	Hydric	basin rims	4	Farmable under natural conditions	0-2	
	(I) Oswald	Hydric	basin rims	2B3,4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded	Hydric	basin rims	3	Neither wooded nor farmable under natural conditions	0-1	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
150:							
Columbia, 0 to 2 percent slopes, frequently flooded	(C) Columbia stratified sand to fine sandy loam	Hydric	channels and sloughs on flood plains	4	Wooded under natural conditions	85	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Gianella fine sandy loam, loam and silt loam	Hydric	bars on flood plains	4	Neither wooded nor farmable under natural conditions	0-5	
	(I) Parrott silt loam	Hydric	bars on flood plains	4	Farmable under natural conditions	0-5	
	(I) Riverwash, unvegetated	Hydric	gravel bars in channels	4	Neither wooded nor farmable under natural conditions	0-5	
150su:							
Olashes sandy loam, 0 to 2 percent slopes	(I) Oswald	Hydric	basin rims	4,2B3	Neither wooded nor farmable under natural conditions	0-8	
	(I) Subaco	Hydric	basin rims	3	Neither wooded nor farmable under natural conditions	0-2	
152:							
Gianella fine sandy loam, 0 to 1 percent slopes, frequently flooded	(I) Columbia, frequently flooded	Hydric	channels on flood plains	4	Wooded under natural conditions	0-3	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
153:							
Gianella sandy loam, 0 to 1 percent slopes, frequently flooded	(I) Columbia, frequently flooded	Hydric	channels on flood plains	4	Wooded under natural conditions	0-5	
	(I) Riverwash	Hydric	gravel bars in channels	4	Neither wooded nor farmable under natural conditions	0-3	
154:							
Gianella silt loam, 0 to 1 percent slopes, frequently flooded	(I) Columbia, frequently flooded	Hydric	channels on flood plains	4	Wooded under natural conditions	0-2	
158:							
Gianella fine sandy loam, 0 to 1 percent slopes, occasionally flooded	(I) Columbia, frequently flooded	Hydric	channels on flood plains	4	Wooded under natural conditions	0-3	
160:							
Gianella loam, 0 to 1 percent slopes, occasionally flooded	(I) Columbia, frequently flooded	Hydric	channels on flood plains	4	Wooded under natural conditions	0-5	
161:							
Gianella fine sandy loam, 0 to 1 percent slopes, rarely flooded	(I) Columbia taxadjunct very fine sandy loam	Hydric	channels on flood plains	2B2	Wooded under natural conditions	0-3	
162:							
Gianella loam, 0 to 1 percent slopes, rarely flooded	(I) Columbia taxadjunct very fine sandy loam	Hydric	channels on flood plains	2B2	Wooded under natural conditions	0-5	
163yu:							
Holillipah loamy sand, 0 to 1 percent slopes, frequently flooded	(C) Holillipah loamy sand	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	85	
	(I) Columbia	Hydric	flood plains	2B2,4	Wooded under natural conditions	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Alter
165yu:							
Holland-Hoda-Hotaw complex, 2 to 30 percent slopes	(I) Wet soils and seeps	Hydric	mountains	2B3	Neither wooded nor farmable under natural conditions	0-3	
177:							
Farwell silt loam, 0 to 1 percent slopes, occasionally flooded	(I) Dodgeland silty clay loam	Hydric	margins between flood basins and flood plains	3	Farmable under natural conditions	0-4	
	(I) Vermet silt loam	Hydric	channels on flood plains	4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Areas with gravel and coarse sand on the surface	Hydric	channels on flood plains	4	Neither wooded nor farmable under natural conditions	0-1	
179:							
Moda taxadjunct-Arbuckle complex, 0 to 2 percent slopes	(C) Moda taxadjunct loam	Hydric	swales on low terraces	3	Neither wooded nor farmable under natural conditions	65	Drainage ditches depth to ditches, construc natural patterns depth, f
	(I) Dodgeland silty clay loam	Hydric	channels	3	Neither wooded nor farmable under natural conditions	0-6	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on low terraces	3	Neither wooded nor farmable under natural conditions	0-4	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
180:							
Dodgeland silty clay loam, 0 to 5 percent slopes, occasionally flooded	(C) Dodgeland silty clay loam, occasionally flooded	Hydric	flood basins	2B3,3	Farmable under natural conditions	85	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Vermet silty clay loam	Hydric	channels on flood plains	4	Farmable under natural conditions	0-5	
	(I) Edjobe silty clay	Hydric	flood basins	3	Farmable under natural conditions	0-2	
	(I) Dodgeland silt loam or sandy clay loam, overwash	Hydric	flood basins	3	Farmable under natural conditions	0-3	
181:							
Dodgeland silty clay loam, 0 to 1 percent slopes, frequently flooded	(C) Dodgeland silty clay loam, frequently flooded	Hydric	channels on flood basins	2B3,3,4	Neither wooded nor farmable under natural conditions	80	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Vermet	Hydric	channels on margins of flood plains and flood basins	4	Neither wooded nor farmable under natural conditions	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Alter
181 (continued):							
	(I) Edjobe	Hydric	flood basins	3,4	Farmable under natural conditions	0-3	
	(I) Areas that have been scoured by flooding	Hydric	channels on flood basins	3	Neither wooded nor farmable under natural conditions	0-2	
189:							
Esquon silt loam, 0 to 1 percent slopes, overwash	(C) Esquon silt loam, overwash	Hydric	flood basins	3	Farmable under natural conditions	90	Flood-co reduced frequenc Drainage ditches depth to ditches, urban co modified patterns depth, f
	(I) Neerdobe silt loam, overwash	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Soils that are less than 40 inches deep to a duripan	Hydric	flood basins	3	---	0-3	
	(I) Soils that have overwash as much as 30 inches thick	Hydric	flood basins	3	---	0-2	
200:							
Parrott silt loam, 0 to 2 percent slopes, occasionally flooded	(I) Vermet silt loam	Hydric	channels on flood plains	4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils that have stratified textures	Hydric	filled channels on flood plains	4	Farmable under natural conditions	0-1	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
201:							
Parrott silt loam, 0 to 2 percent slopes, frequently flooded	(C) Parrott silt loam, frequently flooded	Hydric	bars on flood plains	4	Farmable under natural conditions	85	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr During ex winters, as high a December
	(I) Gianella fine sandy loam or loam	Hydric	bars on flood plains	4	Farmable under natural conditions	0-5	
	(I) Kusalslough silty clay loam	Hydric	margins of flood basins, alluvial fans, and flood plains	4	Farmable under natural conditions	0-5	
	(I) Soils that formed in stratified fill	Hydric	abandoned channels on flood plains	4	Farmable under natural conditions	0-3	
205:							
Parrott-Vermet complex, 0 to 2 percent slopes, frequently flooded	(C) Parrott silt loam, frequently flooded	Hydric	bars on flood plains	4	Wooded under natural conditions	50	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr During ex winters, as high a December

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Alter
205 (continued):							
	(C) Vermet silt loam, frequently flooded	Hydric	channels on flood plains	4	Neither wooded nor farmable under natural conditions	35	Flood-co reduced frequenc Drainage ditches depth to ditches, urban co modified patterns depth, f During e winters, as high December
	(I) Columbia sand	Hydric	channels on flood plains	4	Neither wooded nor farmable under natural conditions	0-8	
	(I) Riverwash	Hydric	gravel bars in channels	4	Neither wooded nor farmable under natural conditions	0-7	
220:							
Esquon-Clear Lake complex, 0 to 1 percent slopes, frequently flooded	(C) Esquon clay, frequently flooded	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	60	Flood-co reduced frequenc Drainage ditches depth to ditches, urban co modified patterns depth, f

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
220 (continued):							
	(C) Clear Lake silty clay loam, overwash	Hydric	flood basins	2B3,3,4	Neither wooded nor farmable under natural conditions	30	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Clear Lake clay	Hydric	flood basins	2B3,3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Esquon soils with a duripan at a depth of more than 60 inches	Hydric	flood basins	2B3,3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils that are continuously saturated	Hydric	channels on flood basins	4	Neither wooded nor farmable under natural conditions	0-2	
221yu:							
Sites loam, 3 to 8 percent slopes	(I) Wet soils	Hydric	mountains	2B3	Neither wooded nor farmable under natural conditions	0-2	
222yu:							
Sites loam, 8 to 15 percent slopes	(I) Wet soils	Hydric	mountains	2B3	Neither wooded nor farmable under natural conditions	0-3	
248yu:							
Trainer loam, 0 to 1 percent slopes, occasionally flooded	(I) Columbia	Hydric	flood plains	4,2B2	Wooded under natural conditions	0-4	
	(I) Soils that have a water table within a depth of 20 inches	Hydric	channels	2B3	Neither wooded nor farmable under natural conditions	0-3	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
250:							
Llanoseco silty clay loam, 0 to 2 percent slopes, occasionally flooded	(I) Whitecabin	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Soils in channels	Hydric	channels on flood basins	4	Farmable under natural conditions	0-2	
252:							
Whitecabin-Ordferry silty clays, 0 to 1 percent slopes, occasionally flooded	(C) Whitecabin silty clay, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	60	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(C) Ordferry silty clay, occasionally flooded	Hydric	flood basins	2B3,3	Farmable under natural conditions	25	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Clear Lake clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Soils that are frequently flooded	Hydric	channels on flood basins	4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on flood basins	3	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
255:							
Whitecabin-Ordferry complex, 0 to 1 percent slopes, occasionally flooded	(C) Whitecabin silty clay loam, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	60	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(C) Ordferry silty clay, occasionally flooded	Hydric	flood basins	2B3,3	Farmable under natural conditions	30	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Soils that are frequently flooded	Hydric	channels on flood basins	4	Farmable under natural conditions	0-5	
	(I) Clear Lake clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
256:							
Whitecabin silt loam, 0 to 1 percent slopes, occasionally flooded	(C) Whitecabin silt loam, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	85	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
256 (continued):							
	(I) Soils that are frequently flooded	Hydric	channels on flood basins	4	Farmable under natural conditions	0-5	
	(I) Clear Lake clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Ordferry clay	Hydric	flood basins	2B3,3	Farmable under natural conditions	0-5	
257:							
Llanoseco silty clay loam, 0 to 1 percent slopes, frequently flooded	(I) Whitecabin	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Soils in channels	Hydric	channels on flood basins	4	Wooded under natural conditions	0-2	
258:							
Codora silty clay loam, 0 to 1 percent slopes, occasionally flooded	(I) Marvin	Hydric	flood plains	3	Farmable under natural conditions	0-5	
	(I) Columbia taxadjunct	Hydric	flood plains	2B2,4	Farmable under natural conditions	0-5	
260:							
Ordferry silty clay, 0 to 1 percent slopes, occasionally flooded	(C) Ordferry silty clay, occasionally flooded	Hydric	flood basins	2B3,3	Farmable under natural conditions	90	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Whitecabin	Hydric	flood basins	3	Farmable under natural conditions	0-3	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
260 (continued):							
	(I) Esquon	Hydric	flood basins	3	Farmable under natural conditions	0-2	
	(I) Esquon, overwash	Hydric	flood basins	3	Farmable under natural conditions	0-2	
	(I) Neerdobe	Hydric	flood basins	3	Farmable under natural conditions	0-1	
	(I) Soils that are 10 to 20 inches deep to a duripan	Hydric	flood basins	3	Farmable under natural conditions	0-1	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on flood basins	3	Farmable under natural conditions	0-1	
280:							
Columbia taxadjunct very fine sandy loam, 0 to 1 percent slopes, frequently flooded	(C) Columbia taxadjunct stratified very fine sandy loam	Hydric	channels and oxbows on flood plains	2B2,4	Wooded under natural conditions	80	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Columbia sand	Hydric	channels and oxbows on flood plains	4	Neither wooded nor farmable under natural conditions	0-5	
	(I) Riverwash	Hydric	gravel bars in channels	4	Neither wooded nor farmable under natural conditions	0-5	
	(I) Oxbow lakes	Hydric	oxbows on flood plains	4	Neither wooded nor farmable under natural conditions	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
290:							
Perkins gravelly loam, 0 to 2 percent slopes	(I) Soils that are frequently flooded	Hydric	channels on low terraces	4	Neither wooded nor farmable under natural conditions	0-2	
300:							
Redsluff gravelly loam, 0 to 2 percent slopes	(I) Anita, gravelly duripan	Hydric	swales on low fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-3	
301:							
Wafap-Hamslough complex, 0 to 2 percent slopes	(C) Hamslough clay	Hydric	channels on low stream terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	
	(I) Anita, gravelly duripan	Hydric	clay swales on stream terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools in channels on low stream terraces	3	Neither wooded nor farmable under natural conditions	0-1	
302:							
Redtough-Redswale complex, 0 to 2 percent slopes	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on high fan terraces	3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Redswale soils that are frequently flooded for long periods	Hydric	swales on high fan terraces	4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Anita, gravelly duripan	Hydric	swales on high fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
303:							
Munjar-Tuscan taxadjunct-Galt complex, 0 to 2 percent slopes	(I) Galt clay	Hydric	swales on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-10	
	(I) Anita clay	Hydric	swales on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils in cobble-lined channels	Hydric	channels in fan terraces	4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on intermediate fan terraces	3	---	0-1	
305:							
Redtough-Redswale-Anita, gravelly duripan, complex, 0 to 5 percent slopes	(C) Anita, gravelly duripan	Hydric	swales on strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	20	Drainage ditches h depth to ditches, construct natural o patterns, depth, fr
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on strath terraces	3	Neither wooded nor farmable under natural conditions	0-2	
306:							
Duric Xerarents complex, 0 to 1 percent slopes	(C) Duric Xerarents, fill	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	50	Drainage ditches h depth to ditches, construct natural o patterns, depth, fr

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
306 (continued):							
	(C) Duric Xerarents, cut	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	40	Drainage ditches h depth to ditches, construct natural o patterns, depth, fr
	(I) Tuscan	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Fallager loam	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Anita	Hydric	leveled strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Redtough	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-2	
307:							
Duric Xerarents, 0 to 1 percent slopes	(C) Duric Xerarents clay loam, leveled	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	70	Drainage ditches h depth to ditches, construct natural o patterns, depth, fr
	(I) Tuscan	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
307 (continued):							
	(I) Fallager loam	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Anita, gravelly duripan	Hydric	leveled strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Clearhayes	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Redsluff taxadjunct	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Soils in areas of cuts and fills	Hydric	leveled strath terraces	3	Neither wooded nor farmable under natural conditions	0-5	
310:							
Kimball loam, 1 to 3 percent slopes	(I) Galt clay loam	Hydric	small basins and drainageways on low terraces	3	Neither wooded nor farmable under natural conditions	0-5	
317:							
Thompsonflat loam, 2 to 15 percent slopes	(I) Vertisols with a duripan at a depth of 40 inches	Hydric	small basins on high terraces	3	Neither wooded nor farmable under natural conditions	0-1	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
318:							
Thompsonflat-Oroville complex, 0 to 9 percent slopes	(C) Oroville gravelly fine sandy loam	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	40	Drainage ditches h depth to ditches, construct natural o patterns, depth, fr
	(I) Loamy soils that are 10 to 20 inches deep to a duripan	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	0-3	
320:							
Vistarobles-Redding complex, 0 to 9 percent slopes	(C) Vistarobles sandy loam	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	50	Drainage ditches h depth to ditches, construct natural o patterns, depth, fr
	(I) Galt clay	Hydric	small basins on terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Loamy soils that are 10 to 20 inches deep to a duripan	Hydric	swales on terraces	3	Neither wooded nor farmable under natural conditions	0-1	
	(I) Clayey soils that are 10 to 20 inches deep to a duripan	Hydric	small basins, swales, and vernal pools on terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-1	
321:							
Durixeralfs-Typic Petraquepts complex, 0 to 2 percent slopes	(C) Durixeralfs, loamy-skeletal, gravelly fine sandy loam	Hydric	swales on strath terraces	3	Neither wooded nor farmable under natural conditions	20	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
321 (continued):							
	(C) Typic Petraquepts silty clay	Hydric	swales on strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on strath terraces	3	Neither wooded nor farmable under natural conditions	0-8	
	(I) Durixeralfs with 20 to 40 percent cobbles on the surface	Hydric	swales on strath terraces	3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils in cobble-lined channels	Hydric	channels on strath terraces	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Vertisols with a duripan at a depth of 20 to 40 inches	Hydric	basins on strath terraces	3	Neither wooded nor farmable under natural conditions	0-2	
330:							
Wilsoncreek-Trainer loams, 0 to 2 percent slopes, occasionally flooded	(I) Galt clay loam, ponded	Hydric	small basins on low terraces	3	Neither wooded nor farmable under natural conditions	0-4	
335:							
Galt clay loam, 0 to 1 percent slopes	(C) Galt clay loam	Hydric	basins on low terraces	2B3,3	Farmable under natural conditions	85	Drainage ditches h depth to ditches, construct natural o patterns, depth, fr
	(I) Esquon clay	Hydric	basins on low terraces	3	Farmable under natural conditions	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
336:							
Galt clay, 0 to 1 percent slopes	(C) Galt clay	Hydric	basins on terraces	2B3,3	Farmable under natural conditions	90	Drainage ditches h depth to ditches, construct natural o patterns, depth, fr
	(I) Anita clay	Hydric	basins on terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-3	
337:							
Galt clay loam, 0 to 1 percent slopes, leveled	(C) Galt clay loam	Hydric	flood basins	2B3,3	Farmable under natural conditions	85	Drainage ditches h depth to ditches, construct natural o patterns, depth, fr
	(I) Esquon clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
339:							
Oxyaquic Xerofluvents sandy loam, 0 to 1 percent slopes, frequently flooded	(C) Oxyaquic Xerofluvents sandy loam, frequently flooded	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	90	Hydrology artificia construct farmland hydraulic the Chero Butte gol
	(I) Soils less than 20 inches deep to buried basin clay	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are less than 40 inches deep to a duripan	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
339 (continued):							
	(I) Riverwash	Hydric	gravel bars in channels	4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Typic Xerofluvents	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	0-2	
340:							
Rock outcrop-Thermalrocks-Campbellhills complex, 2 to 15 percent slopes	(I) Beatsonhollow	Hydric	swales on top of basalt plateaus	3	Neither wooded nor farmable under natural conditions	0-5	
341:							
Elsey-Beatsonhollow-Campbellhills-Rock outcrop complex, 2 to 5 percent slopes	(C) Beatsonhollow gravelly loam	Hydric	swales on top of basalt plateaus	3	Neither wooded nor farmable under natural conditions	25	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on top of basalt plateaus	3	Neither wooded nor farmable under natural conditions	0-2	
342:							
Thermalrocks-Beatsonhollow taxadjunct-Rock outcrop complex, 2 to 30 percent slopes	(I) Beatsonhollow	Hydric	swales on top and side slopes on eroded remnants of basalt plateaus	3	Neither wooded nor farmable under natural conditions	0-4	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on top of eroded remnants of basalt plateaus	3	Neither wooded nor farmable under natural conditions	0-1	
343:							
Coalcanyon-Coonhollow complex, 5 to 15 percent slopes	(I) Seeps	Hydric	benches and side slopes on basalt plateaus	3	Wooded under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Alter
346:							
Cherotable-Elsey complex, 2 to 15 percent slopes	(I) Seeps	Hydric	tops of basalt plateaus	3	Neither wooded nor farmable under natural conditions	0-2	
353:							
Cherokeespring gravelly silt loam, 2 to 15 percent slopes	(I) Seeps	Hydric	benches on side slopes on basalt plateaus	3	Wooded under natural conditions	0-2	
362:							
Ultic Haploxeralfs, sandstone, low elevation, complex, 2 to 5 percent slopes	(I) Carhart	Hydric	footslopes on sedimentary hills	2B3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Seeps	Hydric	footslopes on sedimentary hills	3	Neither wooded nor farmable under natural conditions	0-1	
363:							
Ultic Haploxeralfs, sandstone, low elevation, complex, 5 to 15 percent slopes	(I) Carhart	Hydric	side slopes on sedimentary hills	2B3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Seeps	Hydric	side slopes on sedimentary hills	3	Neither wooded nor farmable under natural conditions	0-1	
364:							
Ultic Haploxeralfs, sandstone, low elevation, complex, 15 to 30 percent slopes	(I) Carhart	Hydric	side slopes on sedimentary hills	2B3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Seeps	Hydric	side slopes on sedimentary hills	3	Neither wooded nor farmable under natural conditions	0-1	
365:							
Palexerults, 15 to 30 percent slopes	(I) Seeps	Hydric	footslopes and backslopes on hills	3	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
365 (continued):							
	(I) Carhart	Hydric	footslopes and backslopes on hills	2B3	Neither wooded nor farmable under natural conditions	0-2	
366:							
Palexerults, 30 to 50 percent slopes	(I) Seeps	Hydric	backslopes on hills	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Carhart	Hydric	backslopes on hills	2B3	Neither wooded nor farmable under natural conditions	0-2	
370:							
Palexerults, 2 to 15 percent slopes	(I) Seeps	Hydric	footslopes on hills	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Carhart	Hydric	footslopes on hills	2B3	Neither wooded nor farmable under natural conditions	0-2	
376:							
Flagcanyon-Wickscorner complex, 2 to 5 percent slopes	(I) Soils that are frequently ponded for long periods	Hydric	open depressions on table mountain fan terraces	2B2	Neither wooded nor farmable under natural conditions	0-2	
377:							
Flagcanyon taxadjunct-Durixeralfs-Duraquerts complex, 0 to 5 percent slopes	(C) Durixeralfs, clayey-skeletal, loam	Hydric	swales on table mountain fan terraces	3	Neither wooded nor farmable under natural conditions	20	
	(C) Duraquerts gravelly clay	Hydric	swales on table mountain fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	
	(I) Typic Petraquepts	Hydric	swales on table mountain fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
377 (continued):							
	(I) Clayey-skeletal soils with a duripan at a depth of 20 to 40 inches	Hydric	swales on table mountain fan terraces	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on table mountain fan terraces	3	Neither wooded nor farmable under natural conditions	0-2	
400:							
Subaco taxadjunct clay, 0 to 1 percent slopes	(C) Subaco taxadjunct clay	Hydric	flood basins	3	Neither wooded nor farmable under natural conditions	85	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Neerdobe clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Esquon clay	Hydric	flood basins	3	Farmable under natural conditions	0-3	
	(I) Soils that are 10 to 20 inches deep to a duripan	Hydric	flood basins	3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Saline soils	Hydric	flood basins	3	Neither wooded nor farmable under natural conditions	0-2	
420:							
Conejo clay loam, 0 to 1 percent slopes	(I) Edjobe	Hydric	flood basins	3	Farmable under natural conditions	0-1	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
439:							
Oxyaquic Xerofluvents clay, 0 to 1 percent slopes, frequently flooded	(C) Oxyaquic Xerofluvents clay	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	85	Hydrology artificia construct farmland hydraulic the Chero
	(I) Clear Lake clay, frequently flooded	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Oxyaquic Xerofluvents, fine-loamy	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Oxyaquic Xerofluvents, fine-silty	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils that have overwash less than 20 inches thick	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are less than 40 inches deep to a duripan	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are less than 40 inches deep to buried basin clay	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	
440:							
Oxyaquic Xerofluvents silt loam, 0 to 1 percent slopes, frequently flooded	(C) Oxyaquic Xerofluvents silt loam, frequently flooded	Hydric	flood plains within levees on flood basins; stream terraces	4	Neither wooded nor farmable under natural conditions	80	Hydrology artificia construct farmland hydraulic the Chero

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
440 (continued):							
	(I) Clear Lake, overwash	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-5	
	(I) Esquon, overwash	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-5	
	(I) Typic Xerofluvents	Hydric	flood plains	4	Neither wooded nor farmable under natural conditions	0-4	
	(I) Riverwash	Hydric	channels	4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils that are less than 10 inches deep to a duripan	Hydric	channels	4	Neither wooded nor farmable under natural conditions	0-3	
441:							
Oxyaquic Xerofluvents very fine sandy loam, 0 to 1 percent slopes	(I) Blavo clay	Hydric	flood basins	3	Farmable under natural conditions	0-2	
	(I) Esquon, overwash	Hydric	flood basins	3	Farmable under natural conditions	0-2	
442:							
Durixerolls-Haploxerolls clay loams, 0 to 2 percent slopes	(I) Anita clay	Hydric	small basins on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Galt clay loam	Hydric	small basins on fan terraces	2B3,3	Farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
443:							
Durixerolls-Haploxerolls loams, 0 to 2 percent slopes	(I) Galt clay loam	Hydric	small basins on fan terraces	2B3,3	Farmable under natural conditions	0-3	
500:							
Lofgren-Blavo complex, 0 to 1 percent slopes	(C) Lofgren clay	Hydric	flood basins	3	Farmable under natural conditions	45	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(C) Blavo clay	Hydric	flood basins	3	Farmable under natural conditions	40	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Edjobe clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Soils that are 10 to 20 inches deep to a duripan	Hydric	leveled terraces	3	---	0-5	
	(I) Soils that formed in fill	Hydric	filled sloughs on flood basins	3	---	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
501:							
Lofgren-Blavo complex, 0 to 1 percent slopes, occasionally flooded	(C) Lofgren clay, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	45	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(C) Blavo clay, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	40	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Clear Lake clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Soils that formed in fill	Hydric	filled sloughs on flood basins	3	---	0-5	
	(I) Soils that are 10 to 20 inches deep to a duripan	Hydric	leveled terraces	3	---	0-5	
502:							
Blavo silt loam, 0 to 1 percent slopes, overwash, occasionally flooded	(C) Blavo silt loam, overwash, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	80	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
502 (continued):							
	(I) Blavo clay, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Columbia taxadjunct very fine sandy loam	Hydric	channels	2B2,4	Wooded under natural conditions	0-5	
	(I) Lofgren clay, occasionally flooded	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Lofgren silt loam, overwash	Hydric	flood basins	3	Farmable under natural conditions	0-3	
	(I) Columbia sand	Hydric	channels	4	Neither wooded nor farmable under natural conditions	0-2	
519:							
Edjobe silty clay, 0 to 1 percent slopes	(C) Edjobe silty clay	Hydric	flood basins	3	Farmable under natural conditions	85	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Esquon silty clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
520:							
Esquon-Neerdobe complex, 0 to 1 percent slopes	(C) Esquon clay	Hydric	flood basins	3	Farmable under natural conditions	60	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(C) Neerdobe clay	Hydric	flood basins	3	Farmable under natural conditions	30	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Lofgren clay	Hydric	flood basins	3	Farmable under natural conditions	0-2	
	(I) Eastbiggs	Hydric	terraces	3	---	0-2	
	(I) Soils that formed in fill and do not have a duripan	Hydric	filled sloughs on flood basins	3	---	0-2	
	(I) Esquon loamy sand to silty clay, overwash	Hydric	flood basins	3	---	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
521:							
Neerdobe silt loam, 0 to 1 percent slopes, overwash	(C) Neerdobe silt loam, overwash	Hydric	flood basins	3	Farmable under natural conditions	85	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Oxyaquic Xerofluvents, loamy, overwash	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Esquon clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
	(I) Neerdobe clay	Hydric	flood basins	3	Farmable under natural conditions	0-5	
522:							
Clearlake silty clay loam, 0 to 1 percent slopes, overwash, frequently flooded	(C) Clear Lake silty clay loam, overwash	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	80	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Oxyaquic Xerofluvents silty clay loam	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-5	
	(I) Soils that are more than 60 inches deep to a duripan	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
522 (continued):							
	(I) Esquon silty clay loam, overwash	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Wet soils	Hydric	intermittent ponds, channels, and sloughs on flood basins	3,4	Neither wooded nor farmable under natural conditions	0-3	
	(I) Saturated soils that are not subject to cracking	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	
523:							
Esquon silty clay loam, 0 to 1 percent slopes, overwash, frequently flooded	(C) Esquon silty clay loam, overwash	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	80	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr
	(I) Neerdobe silty clay loam or clay loam overwash	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-4	
	(I) Esquon silt loam, overwash	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Oxyaquic Xerofluvents	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-4	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
523 (continued):							
	(I) Soils that are more than 60 inches deep to a duripan	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Saturated soils that are not subject to cracking	Hydric	flood basins	3,4	Neither wooded nor farmable under natural conditions	0-2	
	(I) Wet soils	Hydric	intermittent ponds, channels, and sloughs on flood basins	3,4	Neither wooded nor farmable under natural conditions	0-6	
525:							
Govstanford loam, 0 to 1 percent slopes	(I) Edjobe silty clay	Hydric	flood basins	3	Farmable under natural conditions	0-2	
526:							
Govstanford loam, 0 to 1 percent slopes, occasionally flooded	(I) Oxyaquic Xerofluvents sandy loam, frequently flooded	Hydric	flood plains over flood basins	4	Wooded under natural conditions	0-3	
	(I) Edjobe silty clay	Hydric	flood basins	3	Farmable under natural conditions	0-1	
528:							
Neerdobe clay loam, 0 to 1 percent slopes	(C) Neerdobe clay loam	Hydric	flood basins	3	Farmable under natural conditions	90	Flood-con reduced n frequency Drainage ditches h depth to ditches, urban con modified patterns, depth, fr

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Alter
528 (continued):							
	(I) Soils that are frequently flooded	Hydric	irrigation ditches and channels on flood basins	4	Farmable under natural conditions	0-3	
	(I) Soils that are 10 to 20 inches deep to a duripan	Hydric	flood basins	3	Farmable under natural conditions	0-2	
590:							
Vistarobles-Redding-Argonaut taxadjunct-Haploxererts complex, 0 to 9 percent slopes	(C) Vistarobles sandy loam	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	30	
	(C) Haploxererts gravelly silty clay	Hydric	swales on intermediate terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	
603:							
Oroville-Thermalito-Fernandez-Thompsonflat complex, 0 to 9 percent slopes	(C) Oroville gravelly fine sandy loam	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	30	Drainage ditches depth to ditches, construc natural patterns depth, f
	(I) Vistarobles	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Loamy soils that are 10 to 20 inches deep to a duripan	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on intermediate terraces	3	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
603 (continued):							
	(I) Aquerts, fine, with a duripan at a depth of 20 to 40 inches	Hydric	vernal pools on intermediate terraces	3	Neither wooded nor farmable under natural conditions	0-1	
	(I) Clayey-skeletal soils that are shallow to a duripan	Hydric	swales on intermediate terraces	3	Neither wooded nor farmable under natural conditions	0-1	
605:							
Duric Xerarents-Oroville complex, 0 to 1 percent slopes, leveled	(C) Duric Xerarents fine sandy loam, leveled	Hydric	intermediate terraces	3	Neither wooded nor farmable under natural conditions	75	Drainage ditches h depth to ditches, construct natural o patterns, depth, fr
	(C) Oroville gravelly fine sandy loam	Hydric	intermediate terraces	3	Neither wooded nor farmable under natural conditions	20	Drainage ditches h depth to ditches, construct natural o patterns, depth, fr
	(I) Extremely altered soils in cut areas	Hydric	intermediate terraces	3	Neither wooded nor farmable under natural conditions	0-3	
606:							
Redtough-Fallager-Anita, gravelly duripan, complex, 0 to 3 percent slopes	(C) Fallager loam	Hydric	swales on fan terraces	3	Neither wooded nor farmable under natural conditions	30	
	(C) Anita, gravelly duripan	Hydric	swales on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	
	(I) Galt clay	Hydric	swales on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
606 (continued):							
	(I) Clayey soils less than 10 inches deep to a duripan	Hydric	swales on fan terraces	3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Loamy or clayey soils	Hydric	vernal pools on fan terraces	3	Neither wooded nor farmable under natural conditions	0-2	
609:							
Anita, gravelly duripan-Tuscan taxadjunct complex, 0 to 2 percent slopes	(C) Anita, gravelly duripan	Hydric	clay flats and swales on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	50	
	(I) Galt	Hydric	clay flats on fan terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on fan terraces	3	Neither wooded nor farmable under natural conditions	0-2	
614:							
Doemill-Jokerst complex, 0 to 3 percent slopes	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on ridgetops and strath terraces on volcanic ridges	3	Neither wooded nor farmable under natural conditions	0-2	
615:							
Doemill-Jokerst complex, 3 to 8 percent slopes	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on ridgetops and strath terraces on volcanic ridges	3	Neither wooded nor farmable under natural conditions	0-1	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
619:							
Carhart taxadjunct, 0 to 2 percent slopes	(C) Carhart taxadjunct clay	Hydric	clay basins on strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	90	
	(I) Carhart	Hydric	clay basins on strath terraces	2B3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Anita, gravelly duripan	Hydric	clay basins on strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools in clay basins on strath terraces	3	Neither wooded nor farmable under natural conditions	0-2	
622:							
Xerorthents, shallow-Typic Haploxeralfs-Rock outcrop, cliffs, complex, 15 to 30 percent slopes	(I) Aquic Durixeralfs	Hydric	drainages on side slopes in canyons	2B2	Wooded under natural conditions	0-2	
623:							
Xerorthents, shallow-Typic Haploxeralfs-Rock outcrop, cliffs, complex, 30 to 50 percent slopes	(I) Aquic Durixeralfs	Hydric	drainages on backslopes in canyons	2B2	Wooded under natural conditions	0-1	
629:							
Slideland gravelly loam, 3 to 15 percent slopes	(I) Seeps	Hydric	benches in canyons	4	Wooded under natural conditions	0-1	
675:							
Clearhayes-Hamslough complex, 0 to 2 percent slopes	(C) Hamslough clay	Hydric	channels on low strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Alter
675 (continued):							
	(I) Anita, gravelly duripan	Hydric	clay swales on strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Soils that are frequently ponded for long periods	Hydric	channel on low strath terraces; vernal pools on low strath terraces	3	Neither wooded nor farmable under natural conditions	0-1	
676:							
Carhart-Anita taxadjunct complex, 0 to 12 percent slopes	(C) Carhart clay	Hydric	basins, toeslopes, footslopes, and head slopes on volcanic hills	2B3	Neither wooded nor farmable under natural conditions	50	
	(C) Anita taxadjunct clay	Hydric	basins, toeslopes, footslopes, and head slopes on volcanic hills	2B3,3	Neither wooded nor farmable under natural conditions	40	
	(I) Anita, gravelly duripan	Hydric	basins on strath terraces on volcanic hills	2B3,3	Neither wooded nor farmable under natural conditions	0-6	
677:							
Tuscan-Fallager-Anita, gravelly duripan, complex, 0 to 3 percent slopes	(C) Anita, gravelly duripan	Hydric	swales on strath terraces	2B3,3	Neither wooded nor farmable under natural conditions	15	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools on strath terraces	3	Neither wooded nor farmable under natural conditions	0-3	
	(I) Carhart	Hydric	clay flats on strath terraces	2B3	Neither wooded nor farmable under natural conditions	0-1	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
679:							
Lucksev-Butteside-Carhart complex, 2 to 15 percent slopes	(C) Carhart clay	Hydric	footslopes and head slopes on volcanic ridges, buttes, and hills	2B3	Neither wooded nor farmable under natural conditions	15	
	(I) Anita taxadjunct	Hydric	clay flats on volcanic hills	2B3,3	Neither wooded nor farmable under natural conditions	0-2	
685:							
Bosquejo taxadjunct clay, 0 to 2 percent slopes	(I) Hamslough	Hydric	channels on stream terraces	2B3,3	Neither wooded nor farmable under natural conditions	0-5	
	(I) Soils that are frequently ponded for long periods	Hydric	vernal pools in channels on stream terraces	3	Neither wooded nor farmable under natural conditions	0-1	
687:							
Xerorthents, shallow-Typic Haploxeralfs complex, 2 to 15 percent slopes	(I) Carhart	Hydric	around seeps on footslopes in canyons	2B3	Neither wooded nor farmable under natural conditions	0-2	
	(I) Aquic Durixeralfs	Hydric	drainages on footslopes in canyons	2B2	Wooded under natural conditions	0-2	
721:							
Haploxerands, granitic till, 2 to 15 percent slopes	(I) Aquic Xerofluvents	Hydric	meadows in mountain valleys	2B3	Wooded under natural conditions	0-3	
722:							
Haploxerands, granitic till, 15 to 30 percent slopes	(I) Aquic Xerofluvents	Hydric	meadows in mountain valleys	2B3	Wooded under natural conditions	0-2	
724:							
Haploxerands, volcanic till, 2 to 15 percent slopes	(I) Aquic Xerofluvents	Hydric	meadows in mountain valleys	2B3	Wooded under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
725:							
Haploxerands, volcanic till, 15 to 30 percent slopes	(I) Aquic Xerofluvents	Hydric	meadows in mountain valleys	2B3	Wooded under natural conditions	0-1	
727:							
Bonneyridge sandy loam, 1 to 15 percent slopes	(I) Aquic Xerofluvents	Hydric	meadows in mountains	2B3	Wooded under natural conditions	0-5	
728:							
Bonneyridge sandy loam, 15 to 30 percent slopes	(I) Aquic Xerofluvents	Hydric	meadows in mountains	2B3	Wooded under natural conditions	0-2	
732:							
Bonepile taxadjunct, 2 to 8 percent slopes	(I) Endoaquolls	Hydric	meadows in mountains	2B3	Neither wooded nor farmable under natural conditions	0-2	
734:							
Haploxerands-Aquic Xerofluvents complex, 0 to 15 percent slopes	(C) Aquic Xerofluvents peaty very fine sandy loam	Hydric	meadows in mountain valleys	2B3	Neither wooded nor farmable under natural conditions	35	
735:							
Fluvaquents, loamy, 0 to 3 percent slopes	(C) Fluvaquents, loamy	Hydric	stream terraces in mountain valleys	2B3	Wooded under natural conditions	80	
	(I) Fluvaquents, gravelly	Hydric	terraces in mountain valleys	2B3	Wooded under natural conditions	0-10	
811:							
Powellton-Toadtown complex, 3 to 15 percent slopes	(I) Endoaquolls loam	Hydric	meadows in mountains	2B2	Neither wooded nor farmable under natural conditions	0-2	
902:							
Lava flows-Lumpkin complex, 0 to 15 percent slopes	(I) Springs and riparian areas	Hydric	ridgetops on basalt ridges	4	---	0-1	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
904:							
Lava flows-Lavatop complex, 15 to 30 percent slopes	(I) Springs and riparian areas	Hydric	side slopes on basalt ridges	4	---	0-2	
905:							
Lava flows-Lumpkin complex, 30 to 50 percent slopes	(I) Springs and riparian areas	Hydric	backslopes on basalt ridges	4	---	0-1	
911:							
Endoaquolls, 0 to 8 percent slopes	(C) Endoaquolls loam	Hydric	meadows in volcanic and metamorphic mountains	2B2	Neither wooded nor farmable under natural conditions	75	
	(I) Endoaquolls that are frequently flooded for long periods	Hydric	seeps and channels in meadows in volcanic and metamorphic mountains	2B2,4	Neither wooded nor farmable under natural conditions	0-12	
	(I) Endoaquolls, very gravelly substratum	Hydric	meadows in volcanic and metamorphic mountains	2B2	Neither wooded nor farmable under natural conditions	0-3	
	(I) Aquic Xerofluvents	Hydric	meadows in volcanic and metamorphic mountains	2B3	Wooded under natural conditions	0-3	
	(I) Xerofluvents	Hydric	channels in meadows in volcanic and metamorphic mountains	4	---	0-2	
931:							
Shakeridge-Mudwash-Timberisland complex, 15 to 30 percent slopes	(I) Springs and riparian areas	Hydric	side slopes on basalt ridges	4	Wooded under natural conditions	0-2	

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component/ local phase	Hydric status	Local landform	Hydric criteria (code)	Farmable condition	Pct. of map unit	Altere
934:							
Mudwash gravelly medial sandy loam, 0 to 15 percent slopes	(I) Springs and riparian areas	Hydric	ridgetops on basalt ridges	4	Wooded under natural conditions	0-4	
939:							
Fluvaquentic Humaquepts, 0 to 15 percent slopes	(C) Fluvaquentic Humaquepts very fine sandy loam	Hydric	meadows in granitic mountains	2B3	Wooded under natural conditions	85	
	(I) At an elevation of more than 4,800 feet, soils with a frigid soil temperature regime	Hydric	meadows in metamorphic mountains	2B3	Wooded under natural conditions	0-10	
990:							
Riverwash, 0 to 2 percent slopes, frequently flooded	(C) Riverwash, frequently flooded	Hydric	gravel bars in river channels	4	Neither wooded nor farmable under natural conditions	100	Flood-con altered n frequency timing.
991:							
Xerofluvents, 0 to 4 percent slopes, frequently flooded	(I) Xerofluvents that are frequently flooded for long periods	Hydric	channels on flood plains	4	Neither wooded nor farmable under natural conditions	0-13	

Table 10.--Site Index and Annual Productivity

(Only the soils for which site index productivity information is available are listed. RV means representative v
that occurs most commonly)

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
165yu:					
Holland loam	Douglas-fir	790	__-112-__	__-101-__	Douglas-
	Ponderosa pine	600	__-105-__	__-112-__	incense
					black o
					pine, s
Hoda loam	Douglas-fir	790	__-140-__	__-145-__	Douglas-
	Ponderosa pine	600	__-141-__	__-190-__	incense
					black o
					pine, s
Hotaw loam	Douglas-fir	790	__-130-__	__-129-__	Douglas-
	Ponderosa pine	600	__-102-__	__-106-__	pondero
					Califor
					incense
173yu:					
Hotaw loam	Ponderosa pine	600	__-102-__	__-106-__	Californ
					pondero
Chawanakee gravelly sandy loam	Ponderosa pine	600	__-81-__	__-70-__	Californ
					pondero
Holland loam	Ponderosa pine	600	__-110-__	__-122-__	Ponderos
					black o
					tanoak
176yu:					
Jocal loam	Douglas-fir	790	__-147-__	__-154-__	Douglas-
	Ponderosa pine	600	__-145-__	__-199-__	incense
	White fir	30	__-97-__	__-217-__	black o
					pine, s

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
188yu:					
Mariposa taxadjunct gravelly loam	Douglas-fir	790	__-110-__	__-98-__	Douglas-
	Ponderosa pine	600	__-105-__	__-112-__	pondero
					Califor
					incense
189yu:					
Mariposa taxadjunct gravelly loam	Douglas-fir	790	__-110-__	__-98-__	Douglas-
	Ponderosa pine	600	__-105-__	__-112-__	pondero
					Califor
					incense
206:					
Islandbar sandy loam	Ponderosa pine	600	111-112-113	124-126-128	Ponderos
					Douglas
	Ponderosa pine	605	175-175-175		oak
Chawanakee gravelly sandy loam	Ponderosa pine	600	80-90-107	69-85-116	Ponderos
					sugar p
					Califor
	Ponderosa pine	605	135-147-170		
207:					
Islandbar sandy loam	Ponderosa pine	600	111-112-113	124-126-128	Ponderos
					Douglas
					oak
	Ponderosa pine	605	175-175-175		
Chawanakee gravelly sandy loam	Ponderosa pine	600	80-90-107	69-85-116	Ponderos
					sugar p
					Califor
	Ponderosa pine	605	135-147-170		
208:					
Islandbar sandy loam	Ponderosa pine	600	111-112-113	124-126-128	Ponderos
					Douglas
					oak
	Ponderosa pine	605	175-175-175		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
208:					
Chawanakee gravelly sandy loam	Ponderosa pine	600	80-90-107	69-85-116	Ponderos sugar p Califor
	Ponderosa pine	605	135-147-170		
209:					
Islandbar sandy loam	Ponderosa pine	600	111-112-113	124-126-128	Ponderos Douglas oak
	Ponderosa pine	605	175-175-175		
Chawanakee gravelly sandy loam	Ponderosa pine	600	80-90-107	69-85-116	Ponderos sugar p Califor
	Ponderosa pine	605	135-147-170		
210:					
Featherfalls sandy loam	Ponderosa pine	600	116-123-129	134-149-164	Ponderos
	Douglas-fir	790	122-125-128	118-122-127	incense black o
	Ponderosa pine	605	182-192-200		
	Douglas-fir	605	194-194-194		
Islandbar sandy loam	Ponderosa pine	600	126-131-137	156-168-181	Ponderos
	Douglas-fir	790	72-72-72	58-58-58	incense black o
	Ponderosa pine	605	195-197-200		
	Douglas-fir	605	155-155-155		
211:					
Featherfalls sandy loam	Ponderosa pine	600	116-123-129	134-149-164	Ponderos
	Douglas-fir	790	122-125-128	118-122-127	incense black o
	Ponderosa pine	605	182-192-200		
	Douglas-fir	605	194-194-194		
Islandbar sandy loam	Ponderosa pine	600	126-131-137	156-168-181	Ponderos
	Douglas-fir	790	72-72-72	58-58-58	incense black o
	Ponderosa pine	605	195-197-200		
	Douglas-fir	605	155-155-155		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	T
212:					
Featherfalls sandy loam	Ponderosa pine	600	116-123-129	134-149-164	Ponderos
	Douglas-fir	790	122-125-128	118-122-127	incense
					black o
	Ponderosa pine	605	182-192-200		
	Douglas-fir	605	194-194-194		
Islandbar sandy loam	Ponderosa pine	600	126-131-137	156-168-181	Ponderos
	Douglas-fir	790	72-72-72	58-58-58	incense
					black o
	Ponderosa pine	605	195-197-200		
	Douglas-fir	605	155-155-155		
213:					
Featherfalls sandy loam	Ponderosa pine	600	116-123-129	134-149-164	Ponderos
	Douglas-fir	790	122-125-128	118-122-127	incense
					black o
	Ponderosa pine	605	182-192-200		
	Douglas-fir	605	194-194-194		
Islandbar sandy loam	Ponderosa pine	600	126-131-137	156-168-181	Ponderos
	Douglas-fir	790	72-72-72	58-58-58	incense
					black o
	Ponderosa pine	605	195-197-200		
	Douglas-fir	605	155-155-155		
214:					
Crystalhill gravelly coarse sandy loam	Ponderosa pine	600	110-114-118	122-130-137	Ponderos
					Califor
	Ponderosa pine	605	172-176-180		
Oregongulch gravelly sandy loam	Ponderosa pine	600	115-125-131	132-154-168	Ponderos
					Califor
	Ponderosa pine	605	181-194-200		
Craigsaddle coarse sandy loam	Ponderosa pine	600	110-117-122	122-136-146	Ponderos
					Califor
	Ponderosa pine	605	171-180-188		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
215:					
Crystalhill gravelly coarse sandy loam	Ponderosa pine	600	110-114-118	122-130-137	Ponderos Califor
	Ponderosa pine	605	172-176-180		
Oregongulch gravelly sandy loam	Ponderosa pine	600	115-125-131	132-154-168	Ponderos Califor
	Ponderosa pine	605	181-194-200		
Craigsaddle coarse sandy loam	Ponderosa pine	600	110-117-122	122-136-146	Ponderos Califor
	Ponderosa pine	605	171-180-188		
216:					
Crystalhill gravelly coarse sandy loam	Ponderosa pine	600	110-114-118	122-130-137	Ponderos Califor
	Ponderosa pine	605	172-176-180		
Oregongulch gravelly sandy loam	Ponderosa pine	600	115-125-131	132-154-168	Ponderos Califor
	Ponderosa pine	605	181-194-200		
Craigsaddle coarse sandy loam	Ponderosa pine	600	110-117-122	122-136-146	Ponderos Califor
	Ponderosa pine	605	171-180-188		
217:					
Crystalhill gravelly coarse sandy loam	Ponderosa pine	600	110-114-118	122-130-137	Ponderos Califor
	Ponderosa pine	605	172-176-180		
Oregongulch gravelly sandy loam	Ponderosa pine	600	115-125-131	132-154-168	Ponderos Califor
	Ponderosa pine	605	181-194-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
217:					
Craigsaddle coarse sandy loam	Ponderosa pine	600	110-117-122	122-136-146	Ponderos Califor
	Ponderosa pine	605	171-180-188		
218:					
Chawanakee gravelly sandy loam	Ponderosa pine	600	80-90-107	69-85-116	Ponderos sugar p Califor
	Ponderosa pine	605	135-147-170		
219:					
Chawanakee gravelly sandy loam	Ponderosa pine	600	80-90-107	69-85-116	Ponderos sugar p Califor
	Ponderosa pine	605	135-147-170		
221yu:					
Sites loam	Douglas-fir	790	__-140-__	__-145-__	Douglas-
	Ponderosa pine	600	__-160-__	__-234-__	incense
	White fir	30	__-98-__	__-217-__	black o pine, s
222yu:					
Sites loam	Douglas-fir	790	__-140-__	__-145-__	Douglas-
	Ponderosa pine	600	__-160-__	__-234-__	incense
	White fir	30	__-98-__	__-217-__	black o pine, s
225yu:					
Sites gravelly loam, bedrock substratum	Douglas-fir	790	__-140-__	__-145-__	Douglas-
	Ponderosa pine	600	__-145-__	__-199-__	incense black o pine, s

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
226yu: Sites gravelly loam, bedrock substratum	Douglas-fir	790	__-140-__	__-145-__	Douglas- incense black o pine, s
	Ponderosa pine	600	__-145-__	__-199-__	
227yu: Sites gravelly loam, bedrock substratum	Douglas-fir	790	__-140-__	__-145-__	Douglas- incense black o pine, s
	Ponderosa pine	600	__-145-__	__-199-__	
242yu: Surnuf loam	Ponderosa pine	600	__-118-__	__-137-__	Ponderos black o Pacific live oa
243yu: Surnuf loam	Ponderosa pine	600	__-118-__	__-137-__	Ponderos black o Pacific live oa
244yu: Surnuf loam	Ponderosa pine	600	__-118-__	__-137-__	Ponderos black o Pacific live oa
245: Surnuf loam	Ponderosa pine	600	__-118-__	__-137-__	Ponderos black o Pacific live oa
252yu: Woodleaf gravelly loam	Ponderosa pine	600	__-79-__	__-67-__	Ponderos Douglas

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
253yu:					
Woodleaf gravelly loam--	Ponderosa pine------	600	__-79-__	__-67-__	Ponderos Douglas
561:					
Bigridge loam----------	Ponderosa pine------	600	123-126-130	149-156-166	Ponderos Califor
	Ponderosa pine------	605	189-194-200		
562:					
Bigridge loam----------	Ponderosa pine------	600	123-126-130	149-156-166	Ponderos Califor
	Ponderosa pine------	605	189-194-200		
563:					
Bigridge loam----------	Ponderosa pine------	600	123-126-130	149-156-166	Ponderos Califor
	Ponderosa pine------	605	189-194-200		
564:					
Bigridge loam----------	Ponderosa pine------	600	123-126-130	149-156-166	Ponderos Califor
	Ponderosa pine------	605	189-194-200		
580:					
Surnuf taxadjunct loam--	Ponderosa pine------	600	135-138-140	177-183-188	Ponderos Califor
	Ponderosa pine------	605	200-200-200		
Griffgulch very gravelly silt loam-----	Ponderosa pine------	600	111-118-123	124-137-149	Ponderos
	Douglas-fir---------	790	90-107-125	70-94-122	sugar p oak
	Ponderosa pine------	605	175-183-187		
	Douglas-fir---------	605	155-177-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
581:					
Surnuf taxadjunct loam--	Ponderosa pine------	600	135-138-140	177-183-188	Ponderos Califor
	Ponderosa pine------	605	200-200-200		
Griffgulch very gravelly silt loam-----	Ponderosa pine------	600	111-118-123	124-137-149	Ponderos
	Douglas-fir---------	790	90-107-125	70-94-122	sugar p oak
	Ponderosa pine------	605	175-183-187		
	Douglas-fir---------	605	155-177-200		
582:					
Surnuf taxadjunct loam--	Ponderosa pine------	600	135-138-140	177-183-188	Ponderos Califor
	Ponderosa pine------	605	200-200-200		
Griffgulch very gravelly silt loam-----	Ponderosa pine------	600	111-118-123	124-137-149	Ponderos
	Douglas-fir---------	790	90-107-125	70-94-122	sugar p oak
	Ponderosa pine------	605	175-183-187		
	Douglas-fir---------	605	155-177-200		
583:					
Surnuf taxadjunct loam--	Ponderosa pine------	600	135-138-140	177-183-188	Ponderos Califor
	Ponderosa pine------	605	200-200-200		
Griffgulch very gravelly silt loam-----	Ponderosa pine------	600	111-118-123	124-137-149	Ponderos
	Douglas-fir---------	790	90-107-125	70-94-122	sugar p oak
	Ponderosa pine------	605	175-183-187		
	Douglas-fir---------	605	155-177-200		
629:					
Slideland gravelly loam	Ponderosa pine------	600	145-145-145	199-199-199	Ponderos Califor
	Ponderosa pine------	605	200-200-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	T
630:					
Slideland gravelly loam	Ponderosa pine------	600	145-145-145	199-199-199	Ponderos Califor
	Ponderosa pine------	605	200-200-200		
631:					
Slideland gravelly loam	Ponderosa pine------	600	145-145-145	199-199-199	Ponderos Califor
	Ponderosa pine------	605	200-200-200		
650:					
Schott very gravelly loam----------	Ponderosa pine------	600	90-95-100	85-94-102	Ponderos incense black o
	Ponderosa pine------	605	150-155-161		
651:					
Schott very gravelly loam----------	Ponderosa pine------	600	90-95-100	85-94-102	Ponderos incense black o
	Ponderosa pine------	605	150-155-161		
652:					
Schott very gravelly loam----------	Ponderosa pine------	600	90-95-100	85-94-102	Ponderos incense black o
	Ponderosa pine------	605	150-155-161		
657:					
Bonneyridge sandy loam--	Ponderosa pine------	600	119-131-143	139-168-194	Ponderos
	Douglas-fir---------	790	113-128-140	103-127-145	sugar p
	White fir-----------	30	66-72-84	149-170-204	incense
					black o
	Ponderosa pine------	605	186-196-200		
	Douglas-fir---------	605	174-193-200		
	White fir-----------	605	175-184-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
657:					
Chawanakee gravelly sandy loam	Ponderosa pine	600	73-79-84	59-67-75	Ponderos
	White fir	30	54-54-54	106-106-106	sugar p
					incense
					black o
	Ponderosa pine	605	120-129-137		
	White fir	605	150-150-150		
658:					
Bonneyridge sandy loam	Ponderosa pine	600	119-131-143	139-168-194	Ponderos
	Douglas-fir	790	113-128-140	103-127-145	sugar p
	White fir	30	66-72-84	149-170-204	incense
					black o
	Ponderosa pine	605	186-196-200		
	Douglas-fir	605	174-193-200		
	White fir	605	175-184-200		
Chawanakee gravelly sandy loam	Ponderosa pine	600	73-79-84	59-67-75	Ponderos
	White fir	30	54-54-54	106-106-106	sugar p
					incense
					black o
	Ponderosa pine	605	120-129-137		
	White fir	605	150-150-150		
659:					
Bonneyridge sandy loam	Ponderosa pine	600	119-131-143	139-168-194	Ponderos
	Douglas-fir	790	113-128-140	103-127-145	sugar p
	White fir	30	66-72-84	149-170-204	incense
					black o
	Ponderosa pine	605	186-196-200		
	Douglas-fir	605	174-193-200		
	White fir	605	175-184-200		
Chawanakee gravelly sandy loam	Ponderosa pine	600	73-79-84	59-67-75	Ponderos
	White fir	30	54-54-54	106-106-106	sugar p
					incense
					black o
	Ponderosa pine	605	120-129-137		
	White fir	605	150-150-150		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
660:					
Bonneyridge sandy loam--	Ponderosa pine------	600	119-131-143	139-168-194	Ponderos
	Douglas-fir---------	790	113-128-140	103-127-145	sugar p
	White fir-----------	30	66-72-84	149-170-204	incense
					black o
	Ponderosa pine------	605	186-196-200		
	Douglas-fir---------	605	174-193-200		
	White fir-----------	605	175-184-200		
Chawanakee gravelly sandy loam----------	Ponderosa pine------	600	73-79-84	59-67-75	Ponderos
	White fir-----------	30	54-54-54	106-106-106	sugar p
					incense
					black o
	Ponderosa pine------	605	120-129-137		
	White fir-----------	605	150-150-150		
665:					
Surnuf gravelly loam----	Ponderosa pine------	600	119-121-125	139-144-154	Ponderos
	Douglas-fir---------	790	87-103-119	67-88-113	Califor
	Ponderosa pine------	605	178-187-198		
	Douglas-fir---------	605	142-166-191		
Bigridge loam-----------	Ponderosa pine------	600	123-126-130	149-156-166	Ponderos
					Califor
	Ponderosa pine------	605	189-194-200		
666:					
Surnuf gravelly loam----	Ponderosa pine------	600	119-121-125	139-144-154	Ponderos
	Douglas-fir---------	790	87-103-119	67-88-113	Califor
	Ponderosa pine------	605	178-187-198		
	Douglas-fir---------	605	142-166-191		
Bigridge loam-----------	Ponderosa pine------	600	123-126-130	149-156-166	Ponderos
					Califor
	Ponderosa pine------	605	189-194-200		
667:					
Surnuf gravelly loam----	Ponderosa pine------	600	119-121-125	139-144-154	Ponderos
	Douglas-fir---------	790	87-103-119	67-88-113	Califor
	Ponderosa pine------	605	178-187-198		
	Douglas-fir---------	605	142-166-191		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
667:					
Bigridge loam	Ponderosa pine	600	123-126-130	149-156-166	Ponderos Califor
	Ponderosa pine	605	189-194-200		
668:					
Surnuf gravelly loam	Ponderosa pine	600	119-121-125	139-144-154	Ponderos
	Douglas-fir	790	87-103-119	67-88-113	Califor
	Ponderosa pine	605	178-187-198		
	Douglas-fir	605	142-166-191		
Bigridge loam	Ponderosa pine	600	123-126-130	149-156-166	Ponderos Califor
	Ponderosa pine	605	189-194-200		
674:					
Chawanakee gravelly sandy loam	Ponderosa pine	600	73-79-84	59-67-75	Ponderos
	White fir	30	54-54-54	106-106-106	sugar p incense black o
	Ponderosa pine	605	120-129-137		
	White fir	605	150-150-150		
Bonneyridge sandy loam	Ponderosa pine	600	119-131-143	139-168-194	Ponderos
	Douglas-fir	790	113-128-140	103-127-145	sugar p
	White fir	30	66-72-84	149-170-204	incense black o
	Ponderosa pine	605	186-196-200		
	Douglas-fir	605	174-193-200		
	White fir	605	175-184-200		
700:					
Flumewall gravelly sandy loam	Douglas-fir	790	110-110-110	98-98-98	Douglas-
	Ponderosa pine	600	83-98-113	74-99-128	incense black o
	Douglas-fir	605	169-176-184		
	Ponderosa pine	605	138-156-175		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
701:					
Powellton gravelly loam	Ponderosa pine------	600	140-147-154	188-203-220	Ponderos
	Douglas-fir---------	790	120-129-138	115-128-142	sugar p
	White fir-----------	30	91-91-91	217-217-217	incense
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	190-195-200		
	White fir-----------	605	200-200-200		
Obstruction gravelly sandy loam----------	Ponderosa pine------	600	121-131-144	144-168-197	Ponderos
	Douglas-fir---------	790	134-137-142	136-140-148	sugar p
	White fir-----------	30	72-86-95	170-209-217	incense
					black o
	Ponderosa pine------	605	185-191-200		
	Douglas-fir---------	605	200-200-200		
	White fir-----------	605	188-197-200		
702:					
Cerpone gravelly loam---	Jeffrey pine--------	600	63-69-75	49-54-62	Jeffrey
	Ponderosa pine------	600	63-69-75	49-54-62	Douglas
	Douglas-fir---------	790	84-84-84	63-63-63	
	Jeffrey pine--------	605	101-113-125		
	Ponderosa pine------	605	101-113-125		
	Douglas-fir---------	605	130-130-130		
703:					
Cerpone gravelly loam---	Jeffrey pine--------	600	63-69-75	49-54-62	Jeffrey
	Ponderosa pine------	600	63-69-75	49-54-62	Douglas
	Douglas-fir---------	790	84-84-84	63-63-63	
	Jeffrey pine--------	605	101-113-125		
	Ponderosa pine------	605	101-113-125		
	Douglas-fir---------	605	130-130-130		
704:					
Cerpone gravelly loam---	Jeffrey pine--------	600	63-69-75	49-54-62	Jeffrey
	Ponderosa pine------	600	63-69-75	49-54-62	Douglas
	Douglas-fir---------	790	84-84-84	63-63-63	
	Jeffrey pine--------	605	101-113-125		
	Ponderosa pine------	605	101-113-125		
	Douglas-fir---------	605	130-130-130		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
705:					
Cerpone gravelly loam---	Jeffrey pine--------	600	63-69-75	49-54-62	Jeffrey
	Ponderosa pine------	600	63-69-75	49-54-62	Douglas
	Douglas-fir---------	790	84-84-84	63-63-63	
	Jeffrey pine--------	605	101-113-125		
	Ponderosa pine------	605	101-113-125		
	Douglas-fir---------	605	130-130-130		
711:					
Dixmine very gravelly loam--------------------	Douglas-fir---------	790	120-126-134	115-124-136	Douglas-
	White fir-----------	30	85-85-85	206-206-206	sugar p
	Ponderosa pine------	600	114-131-148	130-168-205	incense
					black o
	Douglas-fir---------	605	180-193-200		
	White fir-----------	605	200-200-200		
	Ponderosa pine------	605	175-187-200		
Toadtown loam-----------	Ponderosa pine------	600	140-146-148	188-201-205	Ponderos
	Douglas-fir---------	790	130-130-130	129-129-129	Douglas
	White fir-----------	30	65-65-65	145-145-145	fir, in
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	200-200-200		
	White fir-----------	605	170-170-170		
712:					
Dixmine very gravelly loam--------------------	Douglas-fir---------	790	120-126-134	115-124-136	Douglas-
	White fir-----------	30	85-85-85	206-206-206	sugar p
	Ponderosa pine------	600	114-131-148	130-168-205	incense
					black o
	Douglas-fir---------	605	180-193-200		
	White fir-----------	605	200-200-200		
	Ponderosa pine------	605	175-187-200		
Toadtown loam-----------	Ponderosa pine------	600	140-146-148	188-201-205	Ponderos
	Douglas-fir---------	790	130-130-130	129-129-129	Douglas
	White fir-----------	30	65-65-65	145-145-145	fir, in
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	200-200-200		
	White fir-----------	605	170-170-170		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	T
713:					
Dixmine very gravelly loam	Douglas-fir	790	120-126-134	115-124-136	Douglas-
	White fir	30	85-85-85	206-206-206	sugar p
	Ponderosa pine	600	114-131-148	130-168-205	incense
					black o
	Douglas-fir	605	180-193-200		
	White fir	605	200-200-200		
	Ponderosa pine	605	175-187-200		
Toadtown loam	Ponderosa pine	600	140-146-148	188-201-205	Ponderos
	Douglas-fir	790	130-130-130	129-129-129	Douglas
	White fir	30	65-65-65	145-145-145	fir, in
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	200-200-200		
	White fir	605	170-170-170		
714:					
Dixmine very gravelly loam	Douglas-fir	790	120-126-134	115-124-136	Douglas-
	White fir	30	85-85-85	206-206-206	sugar p
	Ponderosa pine	600	114-131-148	130-168-205	incense
					black o
	Douglas-fir	605	180-193-200		
	White fir	605	200-200-200		
	Ponderosa pine	605	175-187-200		
Toadtown loam	Ponderosa pine	600	140-146-148	188-201-205	Ponderos
	Douglas-fir	790	130-130-130	129-129-129	Douglas
	White fir	30	65-65-65	145-145-145	fir, in
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	200-200-200		
	White fir	605	170-170-170		
715:					
Logtrain gravelly loam	Ponderosa pine	600	115-123-128	132-149-161	Ponderos
	Douglas-fir	790	90-98-106	70-81-92	sugar p
	White fir	30	70-70-70	163-163-163	incense
					black o
	Ponderosa pine	605	180-193-200		
	Douglas-fir	605	155-162-169		
	White fir	605	170-170-170		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
715:					
Bottlehill very gravelly loam----------	Ponderosa pine------	600	85-93-108	77-90-118	Ponderos
	Douglas-fir---------	790	80-95-111	58-77-100	sugar p
	White fir-----------	30	51-58-66	95-121-149	Califor
	Ponderosa pine------	605	135-146-165		
	Douglas-fir---------	605	135-157-180		
	White fir-----------	605	140-155-170		
Walkermine very gravelly loam----------	Ponderosa pine------	600	75-75-75	62-62-62	Douglas-
	Douglas-fir---------	790	90-90-90	70-70-70	sugar p
	White fir-----------	30	55-55-55	109-109-109	incense
					black o
	Ponderosa pine------	605	125-125-125		
	Douglas-fir---------	605	155-155-155		
	White fir-----------	605	150-150-150		
716:					
Griffgulch very gravelly silt loam-----	Ponderosa pine------	600	111-118-123	124-137-149	Ponderos
	Douglas-fir---------	790	90-107-125	70-94-122	sugar p
					oak
	Ponderosa pine------	605	175-183-187		
	Douglas-fir---------	605	155-177-200		
Surnuf gravelly loam----	Ponderosa pine------	600	119-121-125	139-144-154	Ponderos
	Douglas-fir---------	790	87-103-119	67-88-113	Califor
	Ponderosa pine------	605	178-187-198		
	Douglas-fir---------	605	142-166-191		
717:					
Griffgulch very gravelly silt loam-----	Ponderosa pine------	600	111-118-123	124-137-149	Ponderos
	Douglas-fir---------	790	90-107-125	70-94-122	sugar p
					oak
	Ponderosa pine------	605	175-183-187		
	Douglas-fir---------	605	155-177-200		
Surnuf gravelly loam----	Ponderosa pine------	600	119-121-125	139-144-154	Ponderos
	Douglas-fir---------	790	87-103-119	67-88-113	Califor
	Ponderosa pine------	605	178-187-198		
	Douglas-fir---------	605	142-166-191		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
718:					
Griffgulch very gravelly silt loam-----	Ponderosa pine------	600	111-118-123	124-137-149	Ponderos
	Douglas-fir---------	790	90-107-125	70-94-122	sugar p
					oak
	Ponderosa pine------	605	175-183-187		
	Douglas-fir---------	605	155-177-200		
Surnuf gravelly loam----	Ponderosa pine------	600	119-121-125	139-144-154	Ponderos
	Douglas-fir---------	790	87-103-119	67-88-113	Califor
	Ponderosa pine------	605	178-187-198		
	Douglas-fir---------	605	142-166-191		
719:					
Griffgulch very gravelly silt loam-----	Ponderosa pine------	600	111-118-123	124-137-149	Ponderos
	Douglas-fir---------	790	90-107-125	70-94-122	sugar p
					oak
	Ponderosa pine------	605	175-183-187		
	Douglas-fir---------	605	155-177-200		
Surnuf gravelly loam----	Ponderosa pine------	600	119-121-125	139-144-154	Ponderos
	Douglas-fir---------	790	87-103-119	67-88-113	Califor
	Ponderosa pine------	605	178-187-198		
	Douglas-fir---------	605	142-166-191		
721:					
Haploxerands, granitic till, medial sandy loam	White fir-----------	30	55-61-67	109-131-152	White fi
	Ponderosa pine------	600	111-117-121	124-136-144	pondero
	California red fir--	50	52-52-52	180-180-180	incense
	Douglas-fir---------	790	122-122-122	118-118-118	
	White fir-----------	605	150-162-175		
	Ponderosa pine------	605	175-183-187		
	California red fir--	605	164-164-164		
	Douglas-fir---------	605	186-186-186		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
722:					
Haploxerands, granitic till, medial sandy loam	White fir	30	55-61-67	109-131-152	White fi
	Ponderosa pine	600	111-117-121	124-136-144	pondero
	California red fir	50	52-52-52	180-180-180	incense
	Douglas-fir	790	122-122-122	118-118-118	
	White fir	605	150-162-175		
	Ponderosa pine	605	175-183-187		
	California red fir	605	164-164-164		
	Douglas-fir	605	186-186-186		
723:					
Haploxerands, granitic till, medial sandy loam	White fir	30	55-61-67	109-131-152	White fi
	Ponderosa pine	600	111-117-121	124-136-144	pondero
	California red fir	50	52-52-52	180-180-180	incense
	Douglas-fir	790	122-122-122	118-118-118	
	White fir	605	150-162-175		
	Ponderosa pine	605	175-183-187		
	California red fir	605	164-164-164		
	Douglas-fir	605	186-186-186		
724:					
Haploxerands, volcanic till, cobbly medial sandy loam	White fir	30	55-61-67	109-131-152	White fi
	Ponderosa pine	600	111-117-121	124-136-144	pondero
	California red fir	50	52-52-52	180-180-180	incense
	Douglas-fir	790	122-122-122	118-118-118	
	White fir	605	150-162-175		
	Ponderosa pine	605	175-183-187		
	California red fir	605	164-164-164		
	Douglas-fir	605	186-186-186		
725:					
Haploxerands, volcanic till, cobbly medial sandy loam	White fir	30	55-61-67	109-131-152	White fi
	Ponderosa pine	600	111-117-121	124-136-144	pondero
	California red fir	50	52-52-52	180-180-180	incense
	Douglas-fir	790	122-122-122	118-118-118	
	White fir	605	150-162-175		
	Ponderosa pine	605	175-183-187		
	California red fir	605	164-164-164		
	Douglas-fir	605	186-186-186		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
726:					
Haploxerands, volcanic till, cobbly medial sandy loam----------	White fir----------	30	55-61-67	109-131-152	White fi
	Ponderosa pine------	600	111-117-121	124-136-144	pondero
	California red fir--	50	52-52-52	180-180-180	incense
	Douglas-fir---------	790	122-122-122	118-118-118	
	White fir----------	605	150-162-175		
	Ponderosa pine------	605	175-183-187		
	California red fir--	605	164-164-164		
	Douglas-fir---------	605	186-186-186		
727:					
Bonneyridge sandy loam--	Ponderosa pine------	600	119-131-143	139-168-194	Ponderos
	Douglas-fir---------	790	113-128-140	103-127-145	sugar p
	White fir----------	30	66-72-84	149-170-204	incense
					black o
	Ponderosa pine------	605	186-196-200		
	Douglas-fir---------	605	174-193-200		
	White fir----------	605	175-184-200		
728:					
Bonneyridge sandy loam--	Ponderosa pine------	600	119-131-143	139-168-194	Ponderos
	Douglas-fir---------	790	113-128-140	103-127-145	sugar p
	White fir----------	30	66-72-84	149-170-204	incense
					black o
	Ponderosa pine------	605	186-196-200		
	Douglas-fir---------	605	174-193-200		
	White fir----------	605	175-184-200		
729:					
Bonneyridge sandy loam--	Ponderosa pine------	600	119-131-143	139-168-194	Ponderos
	Douglas-fir---------	790	113-128-140	103-127-145	sugar p
	White fir----------	30	66-72-84	149-170-204	incense
					black o
	Ponderosa pine------	605	186-196-200		
	Douglas-fir---------	605	174-193-200		
	White fir----------	605	175-184-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
730:					
Tusccoll gravelly loam--	Ponderosa pine------	600	102-114-126	106-130-156	Douglas-
	Douglas-fir---------	790	116-124-134	108-121-136	incense
					black o
	Ponderosa pine------	605	162-180-198		
	Douglas-fir---------	605	175-183-200		
Schott very gravelly loam-------------------	Ponderosa pine------	600	90-95-100	85-94-102	Ponderos
					incense
					black o
	Ponderosa pine------	605	150-155-161		
731:					
Tusccoll gravelly loam--	Ponderosa pine------	600	102-114-126	106-130-156	Douglas-
	Douglas-fir---------	790	116-124-134	108-121-136	incense
					black o
	Ponderosa pine------	605	162-180-198		
	Douglas-fir---------	605	175-183-200		
Schott very gravelly loam-------------------	Ponderosa pine------	600	90-95-100	85-94-102	Ponderos
					incense
					black o
	Ponderosa pine------	605	150-155-161		
732:					
Bonepile taxadjunct, duripan substratum-----	Ponderosa pine------	600	95-104-113	94-110-128	Ponderos
	Douglas-fir---------	790	88-92-96	68-73-78	sugar p
	White fir-----------	30	47-50-54	83-91-106	incense
					black o
	Ponderosa pine------	605	162-169-176		
	Douglas-fir---------	605	139-140-142		
	White fir-----------	605	135-142-149		
734:					
Haploxerands medial sandy loam-------------	White fir-----------	30	65-66-67	145-149-152	White fi
	California red fir--	50	52-56-60	171-197-214	pondero
	Ponderosa pine------	600	105-107-110	112-116-122	incense
	White fir-----------	605	169-172-175		
	California red fir--	605	173-177-181		
	Ponderosa pine------	605	169-172-175		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
801:					
Obstruction gravelly sandy loam	Ponderosa pine	600	121-131-144	144-168-197	Ponderos
	Douglas-fir	790	134-137-142	136-140-148	sugar p
	White fir	30	72-86-95	170-209-217	incense
					black o
	Ponderosa pine	605	185-191-200		
	Douglas-fir	605	200-200-200		
	White fir	605	188-197-200		
802:					
Obskel very gravelly sandy loam	Ponderosa pine	600	135-141-150	177-190-210	Ponderos
	Douglas-fir	790	130-142-150	129-148-158	sugar p
	White fir	30	80-85-91	196-206-217	incense
					black o
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	200-200-200		
	White fir	605	200-200-200		
Obstruction gravelly sandy loam	Ponderosa pine	600	121-131-144	144-168-197	Ponderos
	Douglas-fir	790	134-137-142	136-140-148	sugar p
	White fir	30	72-86-95	170-209-217	incense
					black o
	Ponderosa pine	605	185-191-200		
	Douglas-fir	605	200-200-200		
	White fir	605	188-197-200		
803:					
Obskel very gravelly sandy loam	Ponderosa pine	600	135-141-150	177-190-210	Ponderos
	Douglas-fir	790	130-142-150	129-148-158	sugar p
	White fir	30	80-85-91	196-206-217	incense
					black o
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	200-200-200		
	White fir	605	200-200-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
803:					
Obstruction gravelly sandy loam	Ponderosa pine	600	121-131-144	144-168-197	Ponderos
	Douglas-fir	790	134-137-142	136-140-148	sugar p
	White fir	30	72-86-95	170-209-217	incense
					black o
	Ponderosa pine	605	185-191-200		
	Douglas-fir	605	200-200-200		
	White fir	605	188-197-200		
804:					
Obskel very gravelly sandy loam	Ponderosa pine	600	135-141-150	177-190-210	Ponderos
	Douglas-fir	790	130-142-150	129-148-158	sugar p
	White fir	30	80-85-91	196-206-217	incense
					black o
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	200-200-200		
	White fir	605	200-200-200		
Obstruction gravelly sandy loam	Ponderosa pine	600	121-131-144	144-168-197	Ponderos
	Douglas-fir	790	134-137-142	136-140-148	sugar p
	White fir	30	72-86-95	170-209-217	incense
					black o
	Ponderosa pine	605	185-191-200		
	Douglas-fir	605	200-200-200		
	White fir	605	188-197-200		
805:					
Bottlehill very gravelly loam	Ponderosa pine	600	85-93-108	77-90-118	Ponderos
	Douglas-fir	790	80-95-111	58-77-100	sugar p
	White fir	30	51-58-66	95-121-149	Califor
	Ponderosa pine	605	135-146-165		
	Douglas-fir	605	135-157-180		
	White fir	605	140-155-170		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	T
805:					
Walkermine very gravelly loam----------	Ponderosa pine------	600	75-75-75	62-62-62	
	Douglas-fir---------	790	90-90-90	70-70-70	
	White fir-----------	30	55-55-55	109-109-109	
	Ponderosa pine------	605	125-125-125		
	Douglas-fir---------	605	155-155-155		
	White fir-----------	605	150-150-150		
Logtrain gravelly loam--	Ponderosa pine------	600	115-123-128	132-149-161	
	Douglas-fir---------	790	90-98-106	70-81-92	
	White fir-----------	30	70-70-70	163-163-163	
	Ponderosa pine------	605	180-193-200		
	Douglas-fir---------	605	155-162-169		
	White fir-----------	605	170-170-170		
806:					
Bottlehill very gravelly loam----------	Ponderosa pine------	600	85-93-108	77-90-118	Ponderos
	Douglas-fir---------	790	80-95-111	58-77-100	sugar p
	White fir-----------	30	51-58-66	95-121-149	Califor
	Ponderosa pine------	605	135-146-165		
	Douglas-fir---------	605	135-157-180		
	White fir-----------	605	140-155-170		
Logtrain gravelly loam--	Ponderosa pine------	600	115-123-128	132-149-161	Ponderos
	Douglas-fir---------	790	90-98-106	70-81-92	sugar p
	White fir-----------	30	70-70-70	163-163-163	incense
					black o
	Ponderosa pine------	605	180-193-200		
	Douglas-fir---------	605	155-162-169		
	White fir-----------	605	170-170-170		
807:					
Bottlehill very gravelly loam----------	Ponderosa pine------	600	85-93-108	77-90-118	Ponderos
	Douglas-fir---------	790	80-95-111	58-77-100	sugar p
	White fir-----------	30	51-58-66	95-121-149	Califor
	Ponderosa pine------	605	135-146-165		
	Douglas-fir---------	605	135-157-180		
	White fir-----------	605	140-155-170		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
807:					
Logtrain gravelly loam--	Ponderosa pine------	600	115-123-128	132-149-161	Ponderos
	Douglas-fir---------	790	90-98-106	70-81-92	sugar p
	White fir-----------	30	70-70-70	163-163-163	incense
					black o
	Ponderosa pine------	605	180-193-200		
	Douglas-fir---------	605	155-162-169		
	White fir-----------	605	170-170-170		
808:					
Bottlehill very gravelly loam----------	Ponderosa pine------	600	85-93-108	77-90-118	Ponderos
	Douglas-fir---------	790	80-95-111	58-77-100	sugar p
	White fir-----------	30	51-58-66	95-121-149	Califor
	Ponderosa pine------	605	135-146-165		
	Douglas-fir---------	605	135-157-180		
	White fir-----------	605	140-155-170		
Walkermine very gravelly loam----------	Ponderosa pine------	600	75-75-75	62-62-62	Douglas-
	Douglas-fir---------	790	90-90-90	70-70-70	sugar p
	White fir-----------	30	55-55-55	109-109-109	incense
					black o
	Ponderosa pine------	605	125-125-125		
	Douglas-fir---------	605	155-155-155		
	White fir-----------	605	150-150-150		
Logtrain gravelly loam--	Ponderosa pine------	600	115-123-128	132-149-161	Ponderos
	Douglas-fir---------	790	90-98-106	70-81-92	sugar p
	White fir-----------	30	70-70-70	163-163-163	incense
					black o
	Ponderosa pine------	605	180-193-200		
	Douglas-fir---------	605	155-162-169		
	White fir-----------	605	170-170-170		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
809:					
Walkermine very gravelly loam----------	Ponderosa pine------	600	75-75-75	62-62-62	Douglas-
	Douglas-fir---------	790	90-90-90	70-70-70	sugar p
	White fir-----------	30	55-55-55	109-109-109	incense
					black o
	Ponderosa pine------	605	125-125-125		
	Douglas-fir---------	605	155-155-155		
	White fir-----------	605	150-150-150		
Bottlehill very gravelly loam----------	Ponderosa pine------	600	85-93-108	77-90-118	Ponderos
	Douglas-fir---------	790	80-95-111	58-77-100	sugar p
	White fir-----------	30	51-58-66	95-121-149	Califor
	Ponderosa pine------	605	135-146-165		
	Douglas-fir---------	605	135-157-180		
	White fir-----------	605	140-155-170		
Logtrain gravelly loam--	Ponderosa pine------	600	115-123-128	132-149-161	Ponderos
	Douglas-fir---------	790	90-98-106	70-81-92	sugar p
	White fir-----------	30	70-70-70	163-163-163	incense
					black o
	Ponderosa pine------	605	180-193-200		
	Douglas-fir---------	605	155-162-169		
	White fir-----------	605	170-170-170		
810:					
Dixmine very gravelly loam-------------------	Douglas-fir---------	790	120-126-134	115-124-136	Douglas-
	White fir-----------	30	85-85-85	206-206-206	sugar p
	Ponderosa pine------	600	114-131-148	130-168-205	incense
					black o
	Douglas-fir---------	605	180-193-200		
	White fir-----------	605	200-200-200		
	Ponderosa pine------	605	175-187-200		
Mac gravelly loam-------	Douglas-fir---------	790	90-104-113	70-89-103	Douglas-
	Ponderosa pine------	600	121-121-121	144-144-144	sugar p
	White fir-----------	30	64-64-64	142-142-142	Califor
	Douglas-fir---------	605	158-167-173		
	Ponderosa pine------	605	188-188-188		
	White fir-----------	605	166-166-166		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
810:					
Spine very gravelly loam	Ponderosa pine	600	72-86-100	58-78-102	Douglas-
	Douglas-fir	790	70-78-85	58-66-84	sugar p
	White fir	30	44-44-44	75-75-75	Califor
					fir
	Ponderosa pine	605	125-142-160		
	Douglas-fir	605	125-135-145		
	White fir	605	125-125-125		
811:					
Powellton gravelly loam	Ponderosa pine	600	140-147-154	188-203-220	Ponderos
	Douglas-fir	790	120-129-138	115-128-142	sugar p
	White fir	30	91-91-91	217-217-217	incense
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	190-195-200		
	White fir	605	200-200-200		
Toadtown loam	Ponderosa pine	600	140-146-148	188-201-205	Ponderos
	Douglas-fir	790	130-130-130	129-129-129	Douglas
	White fir	30	65-65-65	145-145-145	fir, in
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	200-200-200		
	White fir	605	170-170-170		
812:					
Powellton gravelly loam	Ponderosa pine	600	140-147-154	188-203-220	Ponderos
	Douglas-fir	790	120-129-138	115-128-142	sugar p
	White fir	30	91-91-91	217-217-217	incense
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	190-195-200		
	White fir	605	200-200-200		
Toadtown loam	Ponderosa pine	600	140-146-148	188-201-205	Ponderos
	Douglas-fir	790	130-130-130	129-129-129	Douglas
	White fir	30	65-65-65	145-145-145	fir, in
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	200-200-200		
	White fir	605	170-170-170		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	T
813:					
Powellton gravelly loam	Ponderosa pine	600	140-147-154	188-203-220	Ponderos
	Douglas-fir	790	120-129-138	115-128-142	sugar p
	White fir	30	91-91-91	217-217-217	incense
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	190-195-200		
	White fir	605	200-200-200		
Toadtown loam	Ponderosa pine	600	140-146-148	188-201-205	Ponderos
	Douglas-fir	790	130-130-130	129-129-129	Douglas
	White fir	30	65-65-65	145-145-145	fir, in
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	200-200-200		
	White fir	605	170-170-170		
814:					
Mountyana gravelly loam	Ponderosa pine	600	120-123-126	141-149-156	Ponderos
	Douglas-fir	790	100-103-110	84-88-98	sugar p
	White fir	30	65-66-67	145-149-152	incense
					black c
	Ponderosa pine	605	185-187-190		
	Douglas-fir	605	160-162-165		
	White fir	605	165-168-170		
815:					
Mountyana gravelly loam	Ponderosa pine	600	120-123-126	141-149-156	Ponderos
	Douglas-fir	790	100-103-110	84-88-98	sugar p
	White fir	30	65-66-67	145-149-152	incense
					black c
	Ponderosa pine	605	185-187-190		
	Douglas-fir	605	160-162-165		
	White fir	605	165-168-170		
817:					
Lydon very gravelly medial coarse sandy loam	Ponderosa pine	600	82-92-102	72-88-106	Ponderos
	Douglas-fir	790	94-103-113	75-88-103	incense
					black c
	Ponderosa pine	605	135-147-160		
	Douglas-fir	605	155-167-180		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
818:					
Lydon very gravelly medial coarse sandy loam	Ponderosa pine	600	82-92-102	72-88-106	Ponderos
	Douglas-fir	790	94-103-113	75-88-103	incense
					black o
	Ponderosa pine	605	135-147-160		
	Douglas-fir	605	155-167-180		
819:					
Lydon very gravelly medial coarse sandy loam	Ponderosa pine	600	82-92-102	72-88-106	Ponderos
	Douglas-fir	790	94-103-113	75-88-103	incense
					black o
	Ponderosa pine	605	135-147-160		
	Douglas-fir	605	155-167-180		
820:					
Lydon very gravelly medial coarse sandy loam	Ponderosa pine	600	82-92-102	72-88-106	Ponderos
	Douglas-fir	790	94-103-113	75-88-103	incense
					black o
	Ponderosa pine	605	135-147-160		
	Douglas-fir	605	155-167-180		
821:					
Lydon very gravelly medial coarse sandy loam	Ponderosa pine	600	82-92-102	72-88-106	Ponderos
	Douglas-fir	790	94-103-113	75-88-103	incense
					black o
	Ponderosa pine	605	135-147-160		
	Douglas-fir	605	155-167-180		
822:					
Bonepile gravelly medial loam	Ponderosa pine	600	104-109-115	110-120-132	Ponderos
	Douglas-fir	790	96-96-96	78-78-78	sugar p
	White fir	30	60-64-70	128-142-163	incense
					black o
	Ponderosa pine	605	165-172-175		
	Douglas-fir	605	160-160-160		
	White fir	605	160-169-175		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	T
823:					
Bonepile gravelly medial loam	Ponderosa pine	600	104-109-115	110-120-132	Ponderos
	Douglas-fir	790	96-96-96	78-78-78	sugar p
	White fir	30	60-64-70	128-142-163	incense
					black o
	Ponderosa pine	605	165-172-175		
	Douglas-fir	605	160-160-160		
	White fir	605	160-169-175		
824:					
Beecee very gravelly medial loam	Ponderosa pine	600	130-135-140	166-177-188	Ponderos
	Douglas-fir	790	102-109-122	86-97-118	sugar p
	White fir	30	68-68-69	156-156-156	incense
					black o
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	175-181-200		
	White fir	605	160-170-175		
825:					
Beecee very gravelly medial loam	Ponderosa pine	600	130-135-140	166-177-188	Ponderos
	Douglas-fir	790	102-109-122	86-97-118	sugar p
	White fir	30	68-68-69	156-156-156	incense
					black o
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	175-181-200		
	White fir	605	160-170-175		
Lydon very gravelly medial coarse sandy loam	Ponderosa pine	600	82-92-102	72-88-106	Ponderos
	Douglas-fir	790	94-103-113	75-88-103	incense
					black o
	Ponderosa pine	605	135-147-160		
	Douglas-fir	605	155-167-180		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
826:					
Redbone gravelly medial sandy loam	Ponderosa pine	600	100-103-107	102-108-116	Ponderos
	Douglas-fir	790	98-104-115	81-89-106	sugar p
	White fir	30	45-52-56	77-98-113	incense
					black o
	Ponderosa pine	605	160-160-160		
	Douglas-fir	605	160-168-185		
	White fir	605	125-145-160		
827:					
Redbone gravelly medial sandy loam	Ponderosa pine	600	100-103-107	102-108-116	Ponderos
	Douglas-fir	790	98-104-115	81-89-106	sugar p
	White fir	30	45-52-56	77-98-113	incense
					black o
	Ponderosa pine	605	160-160-160		
	Douglas-fir	605	160-168-185		
	White fir	605	125-145-160		
829:					
Paradiso loam	Ponderosa pine	600	114-119-126	130-139-156	Ponderos
	Douglas-fir	790	109-109-110	97-97-98	sugar p
	White fir	30	64-64-64	142-142-142	incense
					black o
	Ponderosa pine	605	180-187-195		
	Douglas-fir	605	160-162-165		
	White fir	605	160-160-160		
830:					
Paradiso loam	Ponderosa pine	600	114-119-126	130-139-156	Ponderos
	Douglas-fir	790	109-109-110	97-97-98	sugar p
	White fir	30	64-64-64	142-142-142	incense
					black o
	Ponderosa pine	605	180-187-195		
	Douglas-fir	605	160-162-165		
	White fir	605	160-160-160		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	T
831:					
Surnuf gravelly loam----	Ponderosa pine------	600	103-112-117	108-126-136	Douglas-
	Douglas-fir---------	790	94-102-106	75-86-92	sugar p
	White fir-----------	30	65-67-70	145-152-163	Califor
	Ponderosa pine------	605	150-169-180		
	Douglas-fir---------	605	155-158-160		
	White fir-----------	605	170-175-181		
Bigridge loam-----------	Ponderosa pine------	600	123-126-130	149-156-166	Ponderos
					Califor
	Ponderosa pine------	605	189-194-200		
Spine very gravelly loam-------------------	Ponderosa pine------	600	72-86-100	58-78-102	Douglas-
	Douglas-fir---------	790	70-78-85	58-66-84	sugar p
	White fir-----------	30	44-44-44	75-75-75	Califor
					fir
	Ponderosa pine------	605	125-142-160		
	Douglas-fir---------	605	125-135-145		
	White fir-----------	605	125-125-125		
832:					
Surnuf gravelly loam----	Ponderosa pine------	600	103-112-117	108-126-136	Douglas-
	Douglas-fir---------	790	94-102-106	75-86-92	sugar p
	White fir-----------	30	65-67-70	145-152-163	Califor
	Ponderosa pine------	605	150-169-180		
	Douglas-fir---------	605	155-158-160		
	White fir-----------	605	170-175-181		
Bigridge loam-----------	Ponderosa pine------	600	123-126-130	149-156-166	Ponderos
					Califor
	Ponderosa pine------	605	189-194-200		
Spine very gravelly loam-------------------	Ponderosa pine------	600	72-86-100	58-78-102	Douglas-
	Douglas-fir---------	790	70-78-85	58-66-84	sugar p
	White fir-----------	30	44-44-44	75-75-75	Califor
					fir
	Ponderosa pine------	605	125-142-160		
	Douglas-fir---------	605	125-135-145		
	White fir-----------	605	125-125-125		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	T
833:					
Surnuf gravelly loam----	Ponderosa pine------	600	103-112-117	108-126-136	Douglas-
	Douglas-fir---------	790	94-102-106	75-86-92	sugar p
	White fir-----------	30	65-67-70	145-152-163	Califor
	Ponderosa pine------	605	150-169-180		
	Douglas-fir---------	605	155-158-160		
	White fir-----------	605	170-175-181		
Bigridge loam-----------	Ponderosa pine------	600	123-126-130	149-156-166	Ponderos
					Califor
	Ponderosa pine------	605	189-194-200		
Spine very gravelly loam-------------------	Ponderosa pine------	600	72-86-100	58-78-102	Douglas-
	Douglas-fir---------	790	70-78-85	58-66-84	sugar p
	White fir-----------	30	44-44-44	75-75-75	Califor
					fir
	Ponderosa pine------	605	125-142-160		
	Douglas-fir---------	605	125-135-145		
	White fir-----------	605	125-125-125		
834:					
Hietanen gravelly loam--	Ponderosa pine------	600	140-145-150	188-199-210	Ponderos
	Douglas-fir---------	790	116-122-130	108-118-129	sugar p
	White fir-----------	30	62-72-90	135-170-217	incense
					black c
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	181-192-200		
	White fir-----------	605	162-174-195		
Mac gravelly loam-------	Douglas-fir---------	790	90-104-113	70-89-103	Douglas-
	Ponderosa pine------	600	121-121-121	144-144-144	sugar p
	White fir-----------	30	64-64-64	142-142-142	Califor
	Douglas-fir---------	605	158-167-173		
	Ponderosa pine------	605	188-188-188		
	White fir-----------	605	166-166-166		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	T
835:					
Hietanen gravelly loam--	Ponderosa pine------	600	140-145-150	188-199-210	Ponderos
	Douglas-fir---------	790	116-122-130	108-118-129	sugar p
	White fir-----------	30	62-72-90	135-170-217	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	181-192-200		
	White fir-----------	605	162-174-195		
Mac gravelly loam-------	Douglas-fir---------	790	90-104-113	70-89-103	Douglas-
	Ponderosa pine------	600	121-121-121	144-144-144	sugar p
	White fir-----------	30	64-64-64	142-142-142	Califor
	Douglas-fir---------	605	158-167-173		
	Ponderosa pine------	605	188-188-188		
	White fir-----------	605	166-166-166		
836:					
Hietanen gravelly loam--	Ponderosa pine------	600	140-145-150	188-199-210	Ponderos
	Douglas-fir---------	790	116-122-130	108-118-129	sugar p
	White fir-----------	30	62-72-90	135-170-217	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	181-192-200		
	White fir-----------	605	162-174-195		
Mac gravelly loam-------	Douglas-fir---------	790	90-104-113	70-89-103	Douglas-
	Ponderosa pine------	600	121-121-121	144-144-144	sugar p
	White fir-----------	30	64-64-64	142-142-142	Califor
	Douglas-fir---------	605	158-167-173		
	Ponderosa pine------	605	188-188-188		
	White fir-----------	605	166-166-166		
Spine very gravelly loam-------------------	Ponderosa pine------	600	72-86-100	58-78-102	Douglas-
	Douglas-fir---------	790	70-78-85	58-66-84	sugar p
	White fir-----------	30	44-44-44	75-75-75	Califor
					fir
	Ponderosa pine------	605	125-142-160		
	Douglas-fir---------	605	125-135-145		
	White fir-----------	605	125-125-125		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
837:					
Hietanen gravelly loam--	Ponderosa pine------	600	140-145-150	188-199-210	Ponderos
	Douglas-fir---------	790	116-122-130	108-118-129	sugar p
	White fir-----------	30	62-72-90	135-170-217	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	181-192-200		
	White fir-----------	605	162-174-195		
Spine very gravelly loam--------------------	Ponderosa pine------	600	72-86-100	58-78-102	Douglas-
	Douglas-fir---------	790	70-78-85	58-66-84	sugar p
	White fir-----------	30	44-44-44	75-75-75	Califor
					fir
	Ponderosa pine------	605	125-142-160		
	Douglas-fir---------	605	125-135-145		
	White fir-----------	605	125-125-125		
Mac gravelly loam-------	Douglas-fir---------	790	90-104-113	70-89-103	Douglas-
	Ponderosa pine------	600	121-121-121	144-144-144	sugar p
	White fir-----------	30	64-64-64	142-142-142	Califor
	Douglas-fir---------	605	158-167-173		
	Ponderosa pine------	605	188-188-188		
	White fir-----------	605	166-166-166		
838:					
Dixmine very gravelly loam--------------------	Douglas-fir---------	790	120-126-134	115-124-136	Douglas-
	White fir-----------	30	85-85-85	206-206-206	sugar p
	Ponderosa pine------	600	114-131-148	130-168-205	incense
					black o
	Douglas-fir---------	605	180-193-200		
	White fir-----------	605	200-200-200		
	Ponderosa pine------	605	175-187-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
838:					
Spine very gravelly loam	Ponderosa pine	600	72-86-100	58-78-102	Douglas-
	Douglas-fir	790	70-78-85	58-66-84	sugar p
	White fir	30	44-44-44	75-75-75	Califor
					fir
	Ponderosa pine	605	125-142-160		
	Douglas-fir	605	125-135-145		
	White fir	605	125-125-125		
Mac gravelly loam	Douglas-fir	790	90-104-113	70-89-103	Douglas-
	Ponderosa pine	600	121-121-121	144-144-144	sugar p
	White fir	30	64-64-64	142-142-142	Califor
	Douglas-fir	605	158-167-173		
	Ponderosa pine	605	188-188-188		
	White fir	605	166-166-166		
839:					
Chawanakee gravelly sandy loam	Ponderosa pine	600	73-79-84	59-67-75	Ponderos
	White fir	30	54-54-54	106-106-106	sugar p
					incense
					black o
	Ponderosa pine	605	120-129-137		
	White fir	605	150-150-150		
Billscabin gravelly sandy loam	Ponderosa pine	600	126-135-145	156-177-199	Ponderos
	Douglas-fir	790	122-129-135	118-128-138	sugar p
	White fir	30	66-71-77	149-166-186	incense
					black o
	Ponderosa pine	605	194-198-200		
	Douglas-fir	605	192-197-200		
	White fir	605	176-185-193		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
841:					
Billscabin gravelly sandy loam	Ponderosa pine	600	126-135-145	156-177-199	Ponderos
	Douglas-fir	790	122-129-135	118-128-138	sugar p
	White fir	30	66-71-77	149-166-186	incense
					black o
	Ponderosa pine	605	194-198-200		
	Douglas-fir	605	192-197-200		
	White fir	605	176-185-193		
Bonneyridge sandy loam	Ponderosa pine	600	119-131-143	139-168-194	Ponderos
	Douglas-fir	790	113-128-140	103-127-145	sugar p
	White fir	30	66-72-84	149-170-204	incense
					black o
	Ponderosa pine	605	186-196-200		
	Douglas-fir	605	174-193-200		
	White fir	605	175-184-200		
842:					
Billscabin gravelly sandy loam	Ponderosa pine	600	126-135-145	156-177-199	Ponderos
	Douglas-fir	790	122-129-135	118-128-138	sugar p
	White fir	30	66-71-77	149-166-186	incense
					black o
	Ponderosa pine	605	194-198-200		
	Douglas-fir	605	192-197-200		
	White fir	605	176-185-193		
Bonneyridge sandy loam	Ponderosa pine	600	119-131-143	139-168-194	Ponderos
	Douglas-fir	790	113-128-140	103-127-145	sugar p
	White fir	30	66-72-84	149-170-204	incense
					black o
	Ponderosa pine	605	186-196-200		
	Douglas-fir	605	174-193-200		
	White fir	605	175-184-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
846:					
Bonneyridge sandy loam--	Ponderosa pine------	600	119-131-143	139-168-194	Ponderos
	Douglas-fir---------	790	113-128-140	103-127-145	sugar p
	White fir-----------	30	66-72-84	149-170-204	incense
					black o
	Ponderosa pine------	605	186-196-200		
	Douglas-fir---------	605	174-193-200		
	White fir-----------	605	175-184-200		
Lewisflat loam----------	Ponderosa pine------	600	135-150-160	177-210-234	Ponderos
	Douglas-fir---------	790	115-123-135	106-119-138	white f
	White fir-----------	30	93-103-110	217-217-217	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	185-191-200		
	White fir-----------	605	200-200-200		
847:					
Bonneyridge sandy loam--	Ponderosa pine------	600	119-131-143	139-168-194	Ponderos
	Douglas-fir---------	790	113-128-140	103-127-145	sugar p
	White fir-----------	30	66-72-84	149-170-204	incense
					black o
	Ponderosa pine------	605	186-196-200		
	Douglas-fir---------	605	174-193-200		
	White fir-----------	605	175-184-200		
Lewisflat loam----------	Ponderosa pine------	600	135-150-160	177-210-234	Ponderos
	Douglas-fir---------	790	115-123-135	106-119-138	white f
	White fir-----------	30	93-103-110	217-217-217	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	185-191-200		
	White fir-----------	605	200-200-200		
848:					
Bonneyridge sandy loam--	Ponderosa pine------	600	119-131-143	139-168-194	Ponderos
	Douglas-fir---------	790	113-128-140	103-127-145	sugar p
	White fir-----------	30	66-72-84	149-170-204	incense
					black o
	Ponderosa pine------	605	186-196-200		
	Douglas-fir---------	605	174-193-200		
	White fir-----------	605	175-184-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
848:					
Lewisflat loam----------	Ponderosa pine------	600	135-150-160	177-210-234	Ponderos
	Douglas-fir---------	790	115-123-135	106-119-138	white f
	White fir-----------	30	93-103-110	217-217-217	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	185-191-200		
	White fir-----------	605	200-200-200		
850:					
Lewisflat loam----------	Ponderosa pine------	600	135-150-160	177-210-234	Ponderos
	Douglas-fir---------	790	115-123-135	106-119-138	white f
	White fir-----------	30	93-103-110	217-217-217	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	185-191-200		
	White fir-----------	605	200-200-200		
851:					
Lewisflat loam----------	Ponderosa pine------	600	135-150-160	177-210-234	Ponderos
	Douglas-fir---------	790	115-123-135	106-119-138	white f
	White fir-----------	30	93-103-110	217-217-217	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	185-191-200		
	White fir-----------	605	200-200-200		
852:					
Lewisflat loam----------	Ponderosa pine------	600	135-150-160	177-210-234	Ponderos
	Douglas-fir---------	790	115-123-135	106-119-138	white f
	White fir-----------	30	93-103-110	217-217-217	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	185-191-200		
	White fir-----------	605	200-200-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	T
860:					
Toadtown gravelly loam--	Ponderosa pine------	600	147-155-160	203-222-234	Douglas-
	Douglas-fir---------	790	126-132-140	124-133-145	sugar p
	White fir-----------	30	74-82-88	176-200-213	incense
					black c
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	200-200-200		
	White fir-----------	605	191-198-200		
Powellton silt loam-----	Ponderosa pine------	600	153-154-155	217-220-222	Ponderos
	Douglas-fir---------	790	125-136-145	122-139-152	sugar p
	White fir-----------	30	75-83-90	179-202-217	incense
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	200-200-200		
	White fir-----------	605	191-197-200		
861:					
Toadtown gravelly loam--	Ponderosa pine------	600	147-155-160	203-222-234	Douglas-
	Douglas-fir---------	790	126-132-140	124-133-145	sugar p
	White fir-----------	30	74-82-88	176-200-213	incense
					black c
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	200-200-200		
	White fir-----------	605	191-198-200		
Powellton silt loam-----	Ponderosa pine------	600	153-154-155	217-220-222	Ponderos
	Douglas-fir---------	790	125-136-145	122-139-152	sugar p
	White fir-----------	30	75-83-90	179-202-217	incense
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	200-200-200		
	White fir-----------	605	191-197-200		
862:					
Toadtown gravelly loam--	Ponderosa pine------	600	147-155-160	203-222-234	Douglas-
	Douglas-fir---------	790	126-132-140	124-133-145	sugar p
	White fir-----------	30	74-82-88	176-200-213	incense
					black c
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	200-200-200		
	White fir-----------	605	191-198-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
862:					
Powellton silt loam-----	Ponderosa pine------	600	153-154-155	217-220-222	Ponderos
	Douglas-fir---------	790	125-136-145	122-139-152	sugar p
	White fir-----------	30	75-83-90	179-202-217	incense
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	200-200-200		
	White fir-----------	605	191-197-200		
863:					
Toadtown gravelly loam--	Ponderosa pine------	600	147-155-160	203-222-234	Douglas-
	Douglas-fir---------	790	126-132-140	124-133-145	sugar p
	White fir-----------	30	74-82-88	176-200-213	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	200-200-200		
	White fir-----------	605	191-198-200		
Powellton silt loam-----	Ponderosa pine------	600	153-154-155	217-220-222	Ponderos
	Douglas-fir---------	790	125-136-145	122-139-152	sugar p
	White fir-----------	30	75-83-90	179-202-217	incense
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	200-200-200		
	White fir-----------	605	191-197-200		
880:					
Sites taxadjunct gravelly loam----------	Ponderosa pine------	600	141-154-160	190-220-234	Ponderos
	Douglas-fir---------	790	126-136-148	124-139-156	sugar p
	White fir-----------	30	74-74-74	176-176-176	incense
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	200-200-200		
	White fir-----------	605	187-187-187		
Jocal taxadjunct gravelly loam----------	Ponderosa pine------	600	140-150-160	188-210-234	Ponderos
	Douglas-fir---------	790	120-131-140	115-131-145	sugar p
	White fir-----------	30	85-87-90	206-211-217	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	190-197-200		
	White fir-----------	605	200-200-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	T
881:					
Sites taxadjunct gravelly loam	Ponderosa pine	600	141-154-160	190-220-234	Ponderos
	Douglas-fir	790	126-136-148	124-139-156	sugar p
	White fir	30	74-74-74	176-176-176	incense
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	200-200-200		
	White fir	605	187-187-187		
Jocal taxadjunct gravelly loam	Ponderosa pine	600	140-150-160	188-210-234	Ponderos
	Douglas-fir	790	120-131-140	115-131-145	sugar p
	White fir	30	85-87-90	206-211-217	incense
					black o
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	190-197-200		
	White fir	605	200-200-200		
882:					
Sites taxadjunct gravelly loam	Ponderosa pine	600	141-154-160	190-220-234	Ponderos
	Douglas-fir	790	126-136-148	124-139-156	sugar p
	White fir	30	74-74-74	176-176-176	incense
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	200-200-200		
	White fir	605	187-187-187		
Jocal taxadjunct gravelly loam	Ponderosa pine	600	140-150-160	188-210-234	Ponderos
	Douglas-fir	790	120-131-140	115-131-145	sugar p
	White fir	30	85-87-90	206-211-217	incense
					black o
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	190-197-200		
	White fir	605	200-200-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
883:					
Sites taxadjunct gravelly loam----------	Ponderosa pine------	600	141-154-160	190-220-234	Ponderos
	Douglas-fir---------	790	126-136-148	124-139-156	sugar p
	White fir-----------	30	74-74-74	176-176-176	incense
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	200-200-200		
	White fir-----------	605	187-187-187		
Jocal taxadjunct gravelly loam----------	Ponderosa pine------	600	140-150-160	188-210-234	Ponderos
	Douglas-fir---------	790	120-131-140	115-131-145	sugar p
	White fir-----------	30	85-87-90	206-211-217	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	190-197-200		
	White fir-----------	605	200-200-200		
885:					
Rogerville silt loam----	Ponderosa pine------	600	120-132-143	141-170-194	Ponderos
	Douglas-fir---------	790	120-127-135	115-125-138	sugar p
	White fir-----------	30	66-75-84	149-179-204	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	193-197-200		
	White fir-----------	605	175-190-200		
886:					
Rogerville silt loam----	Ponderosa pine------	600	120-132-143	141-170-194	Ponderos
	Douglas-fir---------	790	120-127-135	115-125-138	sugar p
	White fir-----------	30	66-75-84	149-179-204	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	193-197-200		
	White fir-----------	605	175-190-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	T
892:					
Rogerville silt loam----	Ponderosa pine------	600	120-132-143	141-170-194	Ponderos
	Douglas-fir---------	790	120-127-135	115-125-138	sugar p
	White fir-----------	30	66-75-84	149-179-204	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	193-197-200		
	White fir-----------	605	175-190-200		
893:					
Rogerville silt loam----	Ponderosa pine------	600	120-132-143	141-170-194	Ponderos
	Douglas-fir---------	790	120-127-135	115-125-138	sugar p
	White fir-----------	30	66-75-84	149-179-204	incense
					black o
	Ponderosa pine------	605	200-200-200		
	Douglas-fir---------	605	193-197-200		
	White fir-----------	605	175-190-200		
902:					
Lumpkin gravelly medial sandy loam----------	Ponderosa pine------	600	50-59-64	38-45-50	Ponderos
					Califor
	Ponderosa pine------	605	84-95-101		
903:					
Mudwash gravelly medial sandy loam----------	Ponderosa pine------	600	114-121-126	130-144-156	Ponderos
	Douglas-fir---------	790	100-110-120	84-98-115	sugar p
	White fir-----------	30	52-58-72	98-121-170	incense
					black o
	Ponderosa pine------	605	175-186-192		
	Douglas-fir---------	605	175-184-190		
	White fir-----------	605	143-160-187		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
903:					
Timberisland very gravelly medial sandy loam	Ponderosa pine	600	93-102-113	90-106-128	Ponderos
	Douglas-fir	790	107-107-107	94-94-94	sugar p
	White fir	30	78-84-90	189-204-217	incense
					black o
	Ponderosa pine	605	162-165-175		
	Douglas-fir	605	175-175-175		
	White fir	605	187-193-200		
Lavatop gravelly medial fine sandy loam	Ponderosa pine	600	94-95-95	92-94-94	Ponderos
	Douglas-fir	790	86-86-86	66-66-66	white f
					Califor
	Ponderosa pine	605	142-149-152		
	Douglas-fir	605	153-153-153		
904:					
Lavatop gravelly medial fine sandy loam	Ponderosa pine	600	94-95-95	92-94-94	Ponderos
	Douglas-fir	790	86-86-86	66-66-66	white f
					Califor
	Ponderosa pine	605	142-149-152		
	Douglas-fir	605	153-153-153		
905:					
Lumpkin gravelly medial sandy loam	Ponderosa pine	600	50-59-64	38-45-50	Ponderos
					Califor
	Ponderosa pine	605	84-95-101		
906:					
Lumpkin gravelly medial sandy loam	Ponderosa pine	600	50-59-64	38-45-50	Ponderos
					Califor
	Ponderosa pine	605	84-95-101		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
923:					
Powderhouse medial sandy loam	White fir	30	46-57-68	80-117-156	White fi
	California red fir	50	45-52-55	153-180-192	sugar p
	Douglas-fir	790	121-121-121	116-116-116	Califor
	Ponderosa pine	600	110-111-113	122-124-128	
	White fir	605	126-155-175		
	California red fir	605	150-154-157		
	Douglas-fir	605	192-192-192		
	Ponderosa pine	605	165-170-175		
McNair medial coarse sandy loam	White fir	30	61-72-82	131-170-200	White fi
	California red fir	50	50-65-75	171-214-214	sugar p
	Ponderosa pine	600	90-97-107	85-97-116	fir, in
					Califor
	White fir	605	163-182-200		
	California red fir	605	178-186-191		
	Ponderosa pine	605	150-158-170		
Greenwell medial sandy loam	White fir	30	50-61-68	91-131-156	White fi
	Ponderosa pine	600	110-113-114	122-128-130	sugar p
	California red fir	50	48-51-55	164-175-192	fir, in
					Califor
	White fir	605	145-165-175		
	Ponderosa pine	605	170-173-175		
	California red fir	605	153-160-168		
924:					
Powderhouse medial sandy loam	White fir	30	46-57-68	80-117-156	White fi
	California red fir	50	45-52-55	153-180-192	sugar p
	Douglas-fir	790	121-121-121	116-116-116	Califor
	Ponderosa pine	600	110-111-113	122-124-128	
	White fir	605	126-155-175		
	California red fir	605	150-154-157		
	Douglas-fir	605	192-192-192		
	Ponderosa pine	605	165-170-175		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
924:					
McNair medial coarse sandy loam	White fir	30	61-72-82	131-170-200	White fi
	California red fir	50	50-65-75	171-214-214	sugar p
	Ponderosa pine	600	90-97-107	85-97-116	fir, in
					Califor
	White fir	605	163-182-200		
	California red fir	605	178-186-191		
	Ponderosa pine	605	150-158-170		
Greenwell medial sandy loam	White fir	30	50-61-68	91-131-156	White fi
	Ponderosa pine	600	110-113-114	122-128-130	sugar p
	California red fir	50	48-51-55	164-175-192	fir, in
					Califor
	White fir	605	145-165-175		
	Ponderosa pine	605	170-173-175		
	California red fir	605	153-160-168		
925:					
Powderhouse medial sandy loam	White fir	30	46-57-68	80-117-156	White fi
	California red fir	50	45-52-55	153-180-192	sugar p
	Douglas-fir	790	121-121-121	116-116-116	Califor
	Ponderosa pine	600	110-111-113	122-124-128	
	White fir	605	126-155-175		
	California red fir	605	150-154-157		
	Douglas-fir	605	192-192-192		
	Ponderosa pine	605	165-170-175		
McNair medial coarse sandy loam	White fir	30	61-72-82	131-170-200	White fi
	California red fir	50	50-65-75	171-214-214	sugar p
	Ponderosa pine	600	90-97-107	85-97-116	fir, in
					Califor
	White fir	605	163-182-200		
	California red fir	605	178-186-191		
	Ponderosa pine	605	150-158-170		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	T
925:					
Greenwell medial sandy loam	White fir	30	50-61-68	91-131-156	White fi
	Ponderosa pine	600	110-113-114	122-128-130	sugar p
	California red fir	50	48-51-55	164-175-192	fir, in
					Califor
	White fir	605	145-165-175		
	Ponderosa pine	605	170-173-175		
	California red fir	605	153-160-168		
930:					
Timberisland very gravelly medial sandy loam	Ponderosa pine	600	93-102-113	90-106-128	Ponderos
	Douglas-fir	790	107-107-107	94-94-94	sugar p
	White fir	30	78-84-90	189-204-217	incense
					black c
	Ponderosa pine	605	162-165-175		
	Douglas-fir	605	175-175-175		
	White fir	605	187-193-200		
931:					
Mudwash gravelly medial sandy loam	Ponderosa pine	600	114-121-126	130-144-156	Ponderos
	Douglas-fir	790	100-110-120	84-98-115	sugar p
	White fir	30	52-58-72	98-121-170	incense
					black c
	Ponderosa pine	605	175-186-192		
	Douglas-fir	605	175-184-190		
	White fir	605	143-160-187		
Timberisland very gravelly medial sandy loam	Ponderosa pine	600	93-102-113	90-106-128	Ponderos
	Douglas-fir	790	107-107-107	94-94-94	sugar p
	White fir	30	78-84-90	189-204-217	incense
					black c
	Ponderosa pine	605	162-165-175		
	Douglas-fir	605	175-175-175		
	White fir	605	187-193-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
932:					
Mudwash gravelly medial sandy loam	Ponderosa pine	600	114-121-126	130-144-156	Ponderos
	Douglas-fir	790	100-110-120	84-98-115	sugar p
	White fir	30	52-58-72	98-121-170	incense
					black o
	Ponderosa pine	605	175-186-192		
	Douglas-fir	605	175-184-190		
	White fir	605	143-160-187		
934:					
Mudwash gravelly medial sandy loam	Ponderosa pine	600	114-121-126	130-144-156	Ponderos
	Douglas-fir	790	100-110-120	84-98-115	sugar p
	White fir	30	52-58-72	98-121-170	incense
					black o
	Ponderosa pine	605	175-186-192		
	Douglas-fir	605	175-184-190		
	White fir	605	143-160-187		
940:					
Dejonah gravelly loam	White fir	30	60-77-90	128-186-217	White fi
	California red fir	50	50-62-69	171-214-214	sugar p
					incense
	White fir	605	160-185-200		
	California red fir	605	162-179-200		
Stagpoint loam	California red fir	50	65-73-83	214-214-214	White fi
	White fir	30	60-65-70	128-145-163	sugar p
	Ponderosa pine	600	100-115-130	102-132-166	incense
	California red fir	605	175-188-200		
	White fir	605	184-187-190		
	Ponderosa pine	605	160-180-200		
941:					
Dejonah gravelly loam	White fir	30	60-77-90	128-186-217	White fi
	California red fir	50	50-62-69	171-214-214	sugar p
					incense
	White fir	605	160-185-200		
	California red fir	605	162-179-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
941:					
Stagpoint loam----------	California red fir--	50	65-73-83	214-214-214	White fi
	White fir----------	30	60-65-70	128-145-163	sugar p
	Ponderosa pine------	600	100-115-130	102-132-166	incense
	California red fir--	605	175-188-200		
	White fir----------	605	184-187-190		
	Ponderosa pine------	605	160-180-200		
942:					
Stagpoint loam----------	California red fir--	50	65-73-83	214-214-214	White fi
	White fir----------	30	60-65-70	128-145-163	sugar p
	Ponderosa pine------	600	100-115-130	102-132-166	incense
	California red fir--	605	175-188-200		
	White fir----------	605	184-187-190		
	Ponderosa pine------	605	160-180-200		
Dejonah gravelly loam---	White fir----------	30	60-77-90	128-186-217	White fi
	California red fir--	50	50-62-69	171-214-214	sugar p
					incense
	White fir----------	605	160-185-200		
	California red fir--	605	162-179-200		
948:					
Stagpoint loam----------	California red fir--	50	65-73-83	214-214-214	White fi
	White fir----------	30	60-65-70	128-145-163	sugar p
	Ponderosa pine------	600	100-115-130	102-132-166	incense
	California red fir--	605	175-188-200		
	White fir----------	605	184-187-190		
	Ponderosa pine------	605	160-180-200		
Dejonah gravelly loam---	White fir----------	30	60-77-90	128-186-217	White fi
	California red fir--	50	50-62-69	171-214-214	sugar p
					incense
	White fir----------	605	160-185-200		
	California red fir--	605	162-179-200		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				T
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	
949:					
Rogerville taxadjunct fine sandy loam	White fir	30	50-54-59	91-106-124	White fi
	California red fir	50	40-42-45	135-142-153	Jeffrey
	Jeffrey pine	600	95-113-131	94-128-168	Douglas
	White fir	605	137-147-158		
	California red fir	605	145-147-150		
	Jeffrey pine	605	156-178-200		
950:					
Powderhouse medial sandy loam	White fir	30	46-57-68	80-117-156	White fi
	California red fir	50	45-52-55	153-180-192	sugar p
	Douglas-fir	790	121-121-121	116-116-116	Califor
	Ponderosa pine	600	110-111-113	122-124-128	
	White fir	605	126-155-175		
	California red fir	605	150-154-157		
	Douglas-fir	605	192-192-192		
	Ponderosa pine	605	165-170-175		
951:					
Powderhouse medial sandy loam	White fir	30	46-57-68	80-117-156	White fi
	California red fir	50	45-52-55	153-180-192	sugar p
	Douglas-fir	790	121-121-121	116-116-116	Califor
	Ponderosa pine	600	110-111-113	122-124-128	
	White fir	605	126-155-175		
	California red fir	605	150-154-157		
	Douglas-fir	605	192-192-192		
	Ponderosa pine	605	165-170-175		
960:					
Surnuf gravelly loam, high elevation	Ponderosa pine	600	130-138-150	166-183-210	Ponderos
	Douglas-fir	790	106-111-123	92-100-119	sugar p
	White fir	30	60-64-72	128-142-170	incense
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	164-178-187		
	White fir	605	160-171-185		

See footnote at end of table.

Table 10.--Site Index and Annual Productivity--Continued

Map symbol and soil name	Potential productivity				
	Common trees	Site index base	Site index (low-RV-high)	Annual production* (low-RV-high)	T
961:					
Surnuf gravelly loam, high elevation	Ponderosa pine	600	130-138-150	166-183-210	Ponderos
	Douglas-fir	790	106-111-123	92-100-119	sugar p
	White fir	30	60-64-72	128-142-170	incense
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	164-178-187		
	White fir	605	160-171-185		
962:					
Surnuf gravelly loam, high elevation	Ponderosa pine	600	130-138-150	166-183-210	Ponderos
	Douglas-fir	790	106-111-123	92-100-119	sugar p
	White fir	30	60-64-72	128-142-170	incense
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	164-178-187		
	White fir	605	160-171-185		
963:					
Surnuf gravelly loam, high elevation	Ponderosa pine	600	130-138-150	166-183-210	Ponderos
	Douglas-fir	790	106-111-123	92-100-119	sugar p
	White fir	30	60-64-72	128-142-170	incense
	Ponderosa pine	605	200-200-200		
	Douglas-fir	605	164-178-187		
	White fir	605	160-171-185		

* Annual production is given in cubic feet per acre per year at the age of culmination of the mean annual i

Table 11a.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Only the soils for which site index productivity information is available are listed. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
165yu:					
Holland loam--------	40	Low Texture/rock fragments	0.10	Low	
Hoda loam----------	25	Low Texture/rock fragments	0.10	Low	
Hotaw loam----------	20	Low Texture/rock fragments	0.10	Low	
173yu:					
Hotaw loam----------	45	Low Texture/rock fragments	0.10	Low	
Chawanakee gravelly sandy loam---------	20	Low		Low	
Holland loam--------	15	Low Texture/rock fragments	0.10	Low	
176yu:					
Jocal loam----------	80	Low Texture/rock fragments	0.10	Moderate Available water	0.50
188yu:					
Mariposa taxadjunct gravelly loam------	80	Low		Low	
189yu:					
Mariposa taxadjunct gravelly loam------	80	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
206:					
Islandbar sandy loam---------------	60	Low		Moderate Available water	0.50
Chawanakee gravelly sandy loam---------	30	Low		High Available water	1.00

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
207:					
Islandbar sandy loam	60	Low		Low	
Chawanakee gravelly sandy loam	30	Low		Low	
208:					
Islandbar sandy loam	60	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Chawanakee gravelly sandy loam	30	High Texture/slope/ surface depth	1.00	Low	
209:					
Islandbar sandy loam	60	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Chawanakee gravelly sandy loam	30	High Texture/slope/ surface depth	1.00	Low	
210:					
Featherfalls sandy loam	50	Low		Moderate Available water	0.50
Islandbar sandy loam	35	Low		Moderate Available water	0.50
211:					
Featherfalls sandy loam	55	Low		Low	
Islandbar sandy loam	35	Low		Low	
212:					
Featherfalls sandy loam	55	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Islandbar sandy loam	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
213:					
Featherfalls sandy loam	45	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Islandbar sandy loam	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
214:					
Crystalhill gravelly coarse sandy loam	35	Moderate Texture/rock fragments	0.50	High Available water	1.00
Oregongulch gravelly sandy loam	20	Low		High Available water	1.00
Craigsaddle coarse sandy loam	20	High Texture/rock fragments	1.00	High Available water	1.00
215:					
Crystalhill gravelly coarse sandy loam	35	Moderate Texture/rock fragments	0.50	Low	
Oregongulch gravelly sandy loam	20	Low		Low	
Craigsaddle coarse sandy loam	20	High Texture/rock fragments	1.00	Low	
216:					
Crystalhill gravelly coarse sandy loam	35	Low		Low	
Oregongulch gravelly sandy loam	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Craigsaddle coarse sandy loam	20	High Texture/slope/ rock fragments	1.00	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
217:					
Crystalhill gravelly coarse sandy loam	35	Low		Low	
Oregongulch gravelly sandy loam	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Craigsaddle coarse sandy loam	20	High Texture/slope/ rock fragments	1.00	Low	
218:					
Chawanakee gravelly sandy loam	15	High Texture/slope/ surface depth	1.00	Low	
219:					
Chawanakee gravelly sandy loam	15	High Texture/slope/ surface depth	1.00	Low	
221yu:					
Sites loam	85	Low Texture/rock fragments	0.10	Moderate Available water	0.50
222yu:					
Sites loam	85	Low Texture/rock fragments	0.10	Moderate Available water	0.50
225yu:					
Sites gravelly loam, bedrock substratum	80	Low Texture/rock fragments	0.10	Moderate Available water	0.50
226yu:					
Sites gravelly loam, bedrock substratum	80	Low Texture/rock fragments	0.10	Moderate Available water	0.50
227yu:					
Sites gravelly loam, bedrock substratum	80	Low Texture/rock fragments	0.10	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
242yu:					
Surnuf loam---------	80	Low Texture/rock fragments	0.10	Moderate Available water	0.50
243yu:					
Surnuf loam---------	80	Low Texture/rock fragments	0.10	Low	
244yu:					
Surnuf loam---------	80	Low Texture/rock fragments	0.10	Low	
245:					
Surnuf loam---------	80	Low Texture/rock fragments	0.10	Low	
252yu:					
Woodleaf gravelly loam----------	80	Low Texture/rock fragments	0.10	Moderate Available water	0.50
253yu:					
Woodleaf gravelly loam----------	80	Low Texture/rock fragments	0.10	Low	
561:					
Bigridge loam-------	50	Low Texture/rock fragments	0.10	Moderate Available water	0.50
562:					
Bigridge loam-------	50	Low Texture/rock fragments	0.10	Low	
563:					
Bigridge loam-------	50	Low		Low	
564:					
Bigridge loam-------	50	Low		Low	
580:					
Surnuf taxadjunct loam----------	40	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Griffgulch very gravelly silt loam	25	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
581:					
Surnuf taxadjunct loam	65	Low Texture/rock fragments	0.10	Low	
Griffgulch very gravelly silt loam	20	Moderate Texture/surface depth/rock fragments	0.50	Low	
582:					
Surnuf taxadjunct loam	50	Low		Low	
Griffgulch very gravelly silt loam	35	Low		Low	
583:					
Surnuf taxadjunct loam	50	Low		Low	
Griffgulch very gravelly silt loam	35	Low		Low	
629:					
Slideland gravelly loam	80	Low		Moderate Available water	0.50
630:					
Slideland gravelly loam	80	Low		Low	
631:					
Slideland gravelly loam	80	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
650:					
Schott very gravelly loam	65	Moderate Texture/surface depth/rock fragments	0.50	Moderate Available water	0.50
651:					
Schott very gravelly loam	65	Moderate Texture/surface depth/rock fragments	0.50	Low	
652:					
Schott very gravelly loam	65	Low		Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
657:					
Bonneyridge sandy loam	35	Low		High Available water	1.00
Chawanakee gravelly sandy loam	30	Low		High Available water	1.00
658:					
Bonneyridge sandy loam	35	Low		Low	
Chawanakee gravelly sandy loam	30	Low		Low	
659:					
Bonneyridge sandy loam	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Chawanakee gravelly sandy loam	30	High Texture/slope/ surface depth	1.00	Low	
660:					
Bonneyridge sandy loam	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Chawanakee gravelly sandy loam	30	High Texture/slope/ surface depth	1.00	Low	
665:					
Surnuf gravelly loam	40	Low		Moderate Available water	0.50
Bigridge loam	40	Low Texture/rock fragments	0.10	Moderate Available water	0.50
666:					
Surnuf gravelly loam	40	Low		Low	
Bigridge loam	40	Low Texture/rock fragments	0.10	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
667:					
Surnuf gravelly loam	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Bigridge loam	40	Low		Low	
668:					
Surnuf gravelly loam	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Bigridge loam	40	Low		Low	
674:					
Chawanakee gravelly sandy loam	30	High Texture/slope/ surface depth	1.00	Low	
Bonneyridge sandy loam	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
700:					
Flumewall gravelly sandy loam	25	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
701:					
Powellton gravelly loam	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Obstruction gravelly sandy loam	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
702:					
Cerpone gravelly loam	50	Low		Moderate Available water	0.50
703:					
Cerpone gravelly loam	30	Low		Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
704:					
Cerpone gravelly loam	15	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
705:					
Cerpone gravelly loam	15	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
711:					
Dixmine very gravelly loam	45	Moderate Texture/surface depth/rock fragments	0.50	Moderate Available water	0.50
Toadtown loam	40	Low		Moderate Available water	0.50
712:					
Dixmine very gravelly loam	50	Moderate Texture/surface depth/rock fragments	0.50	Low	
Toadtown loam	40	Low		Low	
713:					
Dixmine very gravelly loam	50	Low		Low	
Toadtown loam	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
714:					
Dixmine very gravelly loam	50	Low		Low	
Toadtown loam	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
715:					
Logtrain gravelly loam	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
715:					
Bottlehill very gravelly loam------	30	Low		Low	
Walkermine very gravelly loam------	20	Low		Low	
716:					
Griffgulch very gravelly silt loam	40	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00
Surnuf gravelly loam----------	40	Low		Moderate Available water	0.50
717:					
Griffgulch very gravelly silt loam	40	Moderate Texture/surface depth/rock fragments	0.50	Low	
Surnuf gravelly loam----------	40	Low		Low	
718:					
Griffgulch very gravelly silt loam	35	Low		Low	
Surnuf gravelly loam----------	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
719:					
Griffgulch very gravelly silt loam	35	Low		Low	
Surnuf gravelly loam----------	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
721:					
Haploxerands, granitic till, medial sandy loam--	70	Low		High Available water	1.00
722:					
Haploxerands, granitic till, medial sandy loam--	70	Low		Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
723: Haploxerands, granitic till, medial sandy loam--	70	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
724: Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Low		High Available water	1.00
725: Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Low		Low	
726: Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
727: Bonneyridge sandy loam----------	85	Low		High Available water	1.00
728: Bonneyridge sandy loam----------	85	Low		Low	
729: Bonneyridge sandy loam----------	85	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
730: Tusccoll gravelly loam----------	60	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Schott very gravelly loam------	25	Low		Low	
731: Tusccoll gravelly loam----------	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
731:					
Schott very gravelly loam------	35	Low		Low	
732:					
Bonepile taxadjunct, duripan substratum	90	Low		High Available water	1.00
734:					
Haploxerands medial sandy loam---------	55	Low		High Available water	1.00
801:					
Obstruction gravelly sandy loam	70	Low		Moderate Available water	0.50
802:					
Obskel very gravelly sandy loam	40	Moderate Texture/surface depth/rock fragments	0.50	Low	
Obstruction gravelly sandy loam	40	Low		Low	
803:					
Obskel very gravelly sandy loam	40	Low		Low	
Obstruction gravelly sandy loam	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
804:					
Obskel very gravelly sandy loam	35	Low		Low	
Obstruction gravelly sandy loam	25	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
805:					
Bottlehill very gravelly loam------	50	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
805:					
Walkermine very gravelly loam	20	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00
Logtrain gravelly loam	20	Low		Moderate Available water	0.50
806:					
Bottlehill very gravelly loam	50	Moderate Texture/surface depth/rock fragments	0.50	Low	
Logtrain gravelly loam	20	Low		Low	
807:					
Bottlehill very gravelly loam	35	Low		Low	
Logtrain gravelly loam	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
808:					
Bottlehill very gravelly loam	45	Low		Low	
Walkermine very gravelly loam	20	Low		Low	
Logtrain gravelly loam	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
809:					
Walkermine very gravelly loam	45	Low		Low	
Bottlehill very gravelly loam	15	Low		Low	
Logtrain gravelly loam	15	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
810:					
Dixmine very gravelly loam	35	Low		Low	
Mac gravelly loam	25	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Spine very gravelly loam	25	Low		Low	
811:					
Powellton gravelly loam	50	Low		Moderate Available water	0.50
Toadtown loam	40	Low		Moderate Available water	0.50
812:					
Powellton gravelly loam	50	Low		Low	
Toadtown loam	40	Low		Low	
813:					
Powellton gravelly loam	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Toadtown loam	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
814:					
Mountyana gravelly loam	80	Low		Moderate Available water	0.50
815:					
Mountyana gravelly loam	80	Low		Low	
817:					
Lydon very gravelly medial coarse sandy loam	80	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00
818:					
Lydon very gravelly medial coarse sandy loam	75	Moderate Texture/surface depth/rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
819:					
Lydon very gravelly medial coarse sandy loam	65	Low		Low	
820:					
Lydon very gravelly medial coarse sandy loam	60	Low		Low	
821:					
Lydon very gravelly medial coarse sandy loam	55	Low		Low	
822:					
Bonepile gravelly medial loam	85	Low		Moderate Available water	0.50
823:					
Bonepile gravelly medial loam	85	Low		Low	
824:					
Beecee very gravelly medial loam	85	Low		Low	
825:					
Beecee very gravelly medial loam	60	Low		Low	
Lydon very gravelly medial coarse sandy loam	20	Low		Low	
826:					
Redbone gravelly medial sandy loam	80	Low		High Available water	1.00
827:					
Redbone gravelly medial sandy loam	80	Low		Low	
829:					
Paradiso loam	80	Low		Moderate Available water	0.50
830:					
Paradiso loam	75	Low		Low	
831:					
Surnuf gravelly loam	40	Low		Moderate Available water	0.50
Bigridge loam	30	Low Texture/rock fragments	0.10	Moderate Available water	0.50

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
831:					
Spine very gravelly loam	15	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00
832:					
Surnuf gravelly loam	40	Low		Low	
Bigridge loam	30	Low Texture/rock fragments	0.10	Low	
Spine very gravelly loam	15	Moderate Texture/surface depth/rock fragments	0.50	Low	
833:					
Surnuf gravelly loam	60	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Bigridge loam	15	Low		Low	
Spine very gravelly loam	15	Low		Low	
834:					
Hietanen gravelly loam	50	Low		Moderate Available water	0.50
Mac gravelly loam	30	Low		Moderate Available water	0.50
835:					
Hietanen gravelly loam	60	Low		Low	
Mac gravelly loam	20	Low		Moderate Available water	0.50
836:					
Hietanen gravelly loam	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Mac gravelly loam	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
836:					
Spine very gravelly loam	15	Low		Low	
837:					
Hietanen gravelly loam	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Spine very gravelly loam	25	Low		Low	
Mac gravelly loam	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
838:					
Dixmine very gravelly loam	35	Low		Low	
Spine very gravelly loam	25	Low		Low	
Mac gravelly loam	25	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
839:					
Chawanakee gravelly sandy loam	55	Low		High Available water	1.00
Billscabin gravelly sandy loam	35	Low		High Available water	1.00
841:					
Billscabin gravelly sandy loam	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Bonneyridge sandy loam	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
842:					
Billscabin gravelly sandy loam	60	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
842:					
Bonneyridge sandy loam	25	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
846:					
Bonneyridge sandy loam	60	Low		High Available water	1.00
Lewisflat loam	20	Low		Moderate Available water	0.50
847:					
Bonneyridge sandy loam	60	Low		Low	
Lewisflat loam	20	Low		Low	
848:					
Bonneyridge sandy loam	60	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Lewisflat loam	20	High Texture/slope/ surface depth	1.00	Low	
850:					
Lewisflat loam	85	Low		Moderate Available water	0.50
851:					
Lewisflat loam	80	Low		Low	
852:					
Lewisflat loam	75	High Texture/slope/ surface depth	1.00	Low	
860:					
Toadtown gravelly loam	60	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Powellton silt loam	20	Low		Low	
861:					
Toadtown gravelly loam	60	Low Texture/rock fragments	0.10	Low	
Powellton silt loam	20	Low		Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
862:					
Toadtown gravelly loam	60	Low		Low	
Powellton silt loam	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
863:					
Toadtown gravelly loam	60	Low		Low	
Powellton silt loam	20	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
880:					
Sites taxadjunct gravelly loam	50	Low		Moderate Available water	0.50
Jocal taxadjunct gravelly loam	35	Low		Moderate Available water	0.50
881:					
Sites taxadjunct gravelly loam	50	Low		Low	
Jocal taxadjunct gravelly loam	35	Low		Low	
882:					
Sites taxadjunct gravelly loam	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Jocal taxadjunct gravelly loam	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
883:					
Sites taxadjunct gravelly loam	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Jocal taxadjunct gravelly loam	40	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
885:					
Rogerville silt loam	75	Low Texture/rock fragments	0.10	Moderate Available water	0.50
886:					
Rogerville silt loam	80	Low Texture/rock fragments	0.10	Low	
892:					
Rogerville silt loam	85	Low		Low	
893:					
Rogerville silt loam	85	Low		Low	
902:					
Lumpkin gravelly medial sandy loam--	40	Low		High Available water	1.00
903:					
Mudwash gravelly medial sandy loam--	45	Low		Moderate Available water	0.50
Timberisland very gravelly medial sandy loam---------	25	Low		Low	
Lavatop gravelly medial fine sandy loam---------------	20	Low		High Available water	1.00
904:					
Lavatop gravelly medial fine sandy loam---------------	20	Low		Low	
905:					
Lumpkin gravelly medial sandy loam--	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
906:					
Lumpkin gravelly medial sandy loam--	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
923:					
Powderhouse medial sandy loam---------	45	Low		High Available water	1.00

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
923:					
McNair medial coarse sandy loam--	25	Low		High Available water	1.00
Greenwell medial sandy loam---------	20	Low Texture/rock fragments	0.10	Moderate Available water	0.50
924:					
Powderhouse medial sandy loam---------	45	Low		Low	
McNair medial coarse sandy loam--	25	Low		Low	
Greenwell medial sandy loam---------	20	Low Texture/rock fragments	0.10	Low	
925:					
Powderhouse medial sandy loam---------	45	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
McNair medial coarse sandy loam--	25	High Texture/slope/ surface depth	1.00	Low	
Greenwell medial sandy loam---------	20	Low		Low	
930:					
Timberisland very gravelly medial sandy loam---------	40	Moderate Texture/surface depth/rock fragments	0.50	High Available water	1.00
931:					
Mudwash gravelly medial sandy loam--	25	Low		Low	
Timberisland very gravelly medial sandy loam---------	15	Moderate Texture/surface depth/rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
932:					
Mudwash gravelly medial sandy loam--	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
934:					
Mudwash gravelly medial sandy loam--	80	Low		Moderate Available water	0.50
940:					
Dejonah gravelly loam----------	50	Low		Moderate Available water	0.50
Stagpoint loam------	30	Low		High Available water	1.00
941:					
Dejonah gravelly loam----------	50	Low		Low	
Stagpoint loam------	30	Low		Low	
942:					
Stagpoint loam------	50	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Dejonah gravelly loam----------	30	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
948:					
Stagpoint loam------	55	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
Dejonah gravelly loam----------	35	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	
949:					
Rogerville taxadjunct fine sandy loam---------	80	Moderate Texture/slope/ surface depth/ rock fragments	0.50	Low	

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
950:					
Powderhouse medial sandy loam---------	20	Low		High Available water	1.00
951:					
Powderhouse medial sandy loam---------	20	Low		Low	
960:					
Surnuf gravelly loam, high elevation----------	85	Low Texture/rock fragments	0.10	Moderate Available water	0.50
961:					
Surnuf gravelly loam, high elevation----------	85	Low Texture/rock fragments	0.10	Moderate Available water	0.50
962:					
Surnuf gravelly loam, high elevation----------	85	Low Texture/rock rock fragments	0.10	Low	
963:					
Surnuf gravelly loam, high elevation----------	85	Low		Low	

Table 11b.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Only the soils for which site index productivity information is available are listed. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
165yu:							
Holland loam--------	40	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
Hoda loam----------	25	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
Hotaw loam----------	20	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
173yu:							
Hotaw loam----------	45	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
Chawanakee gravelly sandy loam---------	20	Well suited		Poorly suited		Well suited	
				Slope	0.75		
				Rock fragments	0.50		
Holland loam--------	15	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
176yu:							
Jocal loam----------	80	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
188yu:							
Mariposa taxadjunct gravelly loam------	80	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
189yu:							
Mariposa taxadjunct gravelly loam------	80	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
206:							
Islandbar sandy loam---------------	60	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
				Slope	0.50		
Chawanakee gravelly sandy loam---------	30	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
207:							
Islandbar sandy loam---------------	60	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Sandiness	0.50
				Sandiness	0.50	Slope	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
207:							
Chawanakee gravelly sandy loam	30	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
208:							
Islandbar sandy loam	60	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
Chawanakee gravelly sandy loam	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
209:							
Islandbar sandy loam	60	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
Chawanakee gravelly sandy loam	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
210:							
Featherfalls sandy loam	50	Well suited		Moderately suited		Well suited	
				Slope	0.50		
Islandbar sandy loam	35	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
				Slope	0.50		
211:							
Featherfalls sandy loam	55	Well suited		Unsuited		Moderately suited	
				Slope	1.00	Slope	0.50
Islandbar sandy loam	35	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Sandiness	0.50
				Sandiness	0.50	Slope	0.50
212:							
Featherfalls sandy loam	55	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
Islandbar sandy loam	35	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
213:							
Featherfalls sandy loam	45	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
Islandbar sandy loam	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
214:							
Crystalhill gravelly coarse sandy loam	35	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
Oregongulch gravelly sandy loam	20	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
				Slope	0.50		
				Rock fragments	0.50		
Craigsaddle coarse sandy loam	20	Well suited		Moderately suited		Well suited	
				Slope	0.50		
215:							
Crystalhill gravelly coarse sandy loam	35	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
Oregongulch gravelly sandy loam	20	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Sandiness	0.50
				Sandiness	0.50	Slope	0.50
				Rock fragments	0.50		
Craigsaddle coarse sandy loam	20	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
216:							
Crystalhill gravelly coarse sandy loam	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
Oregongulch gravelly sandy loam	20	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
				Rock fragments	0.50		
Craigsaddle coarse sandy loam	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
217:							
Crystalhill gravelly coarse sandy loam	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
Oregongulch gravelly sandy loam	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
				Rock fragments	0.50		
Craigsaddle coarse sandy loam	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
218:							
Chawanakee gravelly sandy loam	15	Well suited		Unsuited		Moderately suited	
				Slope	1.00	Slope	0.50
				Rock fragments	0.50		
219:							
Chawanakee gravelly sandy loam	15	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
221yu:							
Sites loam	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
222yu:							
Sites loam	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
225yu:							
Sites gravelly loam, bedrock substratum	80	Moderately suited		Moderately suited		Well suited	
		Stickiness; high plasticity index	0.50	Slope	0.50		
				Stickiness; high plasticity index	0.50		
				Rock fragments	0.50		
226yu:							
Sites gravelly loam, bedrock substratum	80	Moderately suited		Moderately suited		Well suited	
		Stickiness; high plasticity index	0.50	Slope	0.50		
				Stickiness; high plasticity index	0.50		
				Rock fragments	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
227yu:							
Sites gravelly loam, bedrock substratum	80	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Slope	0.50
				Stickiness; high plasticity index	0.50		
				Rock fragments	0.50		
242yu:							
Surnuf loam	80	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
243yu:							
Surnuf loam	80	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.50	Slope	0.50
244yu:							
Surnuf loam	80	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
245:							
Surnuf loam	80	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
252yu:							
Woodleaf gravelly loam	80	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Rock fragments	0.75	Low strength	0.50
		Rock fragments	0.50	Stickiness; high plasticity index	0.50		
				Slope	0.50		
253yu:							
Woodleaf gravelly loam	80	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
		Rock fragments	0.50	Rock fragments	0.75	Slope	0.50
				Stickiness; high plasticity index	0.50		
561:							
Bigridge loam	50	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Rock fragments	0.75	Low strength	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
				Slope	0.50		
562:							
Bigridge loam	50	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Low strength	0.50
		Rock fragments	0.50	Rock fragments	0.75	Sandiness	0.50
				Sandiness	0.50	Slope	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
563:							
Bigridge loam-------	50	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75	Low strength	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
564:							
Bigridge loam-------	50	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	0.75	Low strength	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
580:							
Surnuf taxadjunct loam---------------	40	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
Griffgulch very gravelly silt loam	25	Moderately suited		Unsuited		Well suited	
		Rock fragments	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Slope	0.50		
				Stickiness; high plasticity index	0.50		
581:							
Surnuf taxadjunct loam---------------	65	Poorly suited		Unsuited		Moderately suited	
		Stickiness; high plasticity index	0.75	Slope	1.00	Low strength	0.50
				Stickiness; high plasticity index	0.75	Slope	0.50
Griffgulch very gravelly silt loam	20	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Rock fragments	1.00	Slope	0.50
		Stickiness; high plasticity index	0.50	Slope	0.75		
				Stickiness; high plasticity index	0.50		
582:							
Surnuf taxadjunct loam---------------	50	Poorly suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.75	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.75	Low strength	0.50
Griffgulch very gravelly silt loam	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
583:							
Surnuf taxadjunct loam---------------	50	Poorly suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.75	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.75	Low strength	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
583:							
Griffgulch very gravelly silt loam	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
629:							
Slideland gravelly loam----------	80	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
630:							
Slideland gravelly loam----------	80	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
631:							
Slideland gravelly loam----------	80	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
650:							
Schott very gravelly loam------	65	Poorly suited		Unsuited		Moderately suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	0.50
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
		Stickiness; high plasticity index	0.50	Slope	0.50		
				Stickiness; high plasticity index	0.50		
651:							
Schott very gravelly loam------	65	Poorly suited		Unsuited		Moderately suited	
		Rock fragments	0.75	Slope	1.00	Rock fragments	0.50
		Sandiness	0.50	Rock fragments	1.00	Sandiness	0.50
		Stickiness; high plasticity index	0.50	Sandiness	0.50	Slope	0.50
				Stickiness; high plasticity index	0.50		
652:							
Schott very gravelly loam------	65	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
657:							
Bonneyridge sandy loam----------	35	Well suited		Moderately suited		Well suited	
				Slope	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
657:							
Chawanakee gravelly sandy loam---------	30	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
658:							
Bonneyridge sandy loam---------------	35	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
Chawanakee gravelly sandy loam---------	30	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
659:							
Bonneyridge sandy loam---------------	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
Chawanakee gravelly sandy loam---------	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
660:							
Bonneyridge sandy loam---------------	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
Chawanakee gravelly sandy loam---------	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
665:							
Surnuf gravelly loam---------------	40	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
				Stickiness; high plasticity index	0.50		
Bigridge loam-------	40	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Rock fragments	0.75	Low strength	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
				Slope	0.50		
666:							
Surnuf gravelly loam---------------	40	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
				Stickiness; high plasticity index	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
666:							
Bigridge loam-------	40	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Low strength	0.50
		Rock fragments	0.50	Rock fragments	0.75	Sandiness	0.50
				Sandiness	0.50	Slope	0.50
667:							
Surnuf gravelly loam----------	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Rock fragments	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
Bigridge loam-------	40	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75	Low strength	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
668:							
Surnuf gravelly loam----------	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Rock fragments	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
Bigridge loam-------	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	0.75	Low strength	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
674:							
Chawanakee gravelly sandy loam---------	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
Bonneyridge sandy loam----------	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
700:							
Flumewall gravelly sandy loam---------	25	Poorly suited		Unsuited		Poorly suited	
		Slope	0.75	Slope	1.00	Slope	1.00
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	0.50
701:							
Powellton gravelly loam----------	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
Obstruction gravelly sandy loam	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Rock fragments	0.50	Slope	1.00

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
702:							
Cerpone gravelly loam	50	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
				Slope	0.50		
703:							
Cerpone gravelly loam	30	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.75	Slope	0.50
704:							
Cerpone gravelly loam	15	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75	Low strength	0.50
705:							
Cerpone gravelly loam	15	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75	Low strength	0.50
711:							
Dixmine very gravelly loam	45	Moderately suited		Moderately suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.50		
				Slope	0.50		
Toadtown loam	40	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
				Slope	0.50		
712:							
Dixmine very gravelly loam	50	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.50		
Toadtown loam	40	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.50	Slope	0.50
713:							
Dixmine very gravelly loam	50	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50		
Toadtown loam	35	Moderately suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
714:							
Dixmine very gravelly loam------	50	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50		
Toadtown loam-------	35	Moderately suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.50	Slope	1.00	Slope	1.00
				Stickiness; high plasticity index	0.50	Low strength	0.50
		Slope	0.50				
715:							
Logtrain gravelly loam----------	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
Bottlehill very gravelly loam------	30	Poorly suited		Unsuited		Poorly suited	
		Slope	0.75	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Walkermine very gravelly loam------	20	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Slope	1.00
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	0.50
		Slope	0.75	Restrictive layer	1.00		
716:							
Griffgulch very gravelly silt loam	40	Moderately suited		Unsuited		Well suited	
		Rock fragments	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Slope	0.50		
				Stickiness; high plasticity index	0.50		
Surnuf gravelly loam----------	40	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
				Stickiness; high plasticity index	0.50		
717:							
Griffgulch very gravelly silt loam	40	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Rock fragments	1.00	Slope	0.50
		Stickiness; high plasticity index	0.50	Slope	0.75		
				Stickiness; high plasticity index	0.50		
Surnuf gravelly loam----------	40	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
				Stickiness; high plasticity index	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
718:							
Griffgulch very gravelly silt loam	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
Surnuf gravelly loam	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Rock fragments	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
719:							
Griffgulch very gravelly silt loam	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
Surnuf gravelly loam	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Rock fragments	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
721:							
Haploxerands, granitic till, medial sandy loam	70	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
				Slope	0.50		
722:							
Haploxerands, granitic till, medial sandy loam	70	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
				Slope	0.75	Slope	0.50
723:							
Haploxerands, granitic till, medial sandy loam	70	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Rock fragments	1.00
		Slope	0.50	Rock fragments	1.00	Slope	1.00
724:							
Haploxerands, volcanic till, cobbly medial sandy loam	75	Moderately suited		Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	1.00
				Slope	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
725:							
Haploxerands, volcanic till, cobbly medial sandy loam	75	Moderately suited		Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	1.00
				Slope	0.75	Slope	0.50
726:							
Haploxerands, volcanic till, cobbly medial sandy loam	75	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Rock fragments	1.00
		Slope	0.50	Rock fragments	0.75	Slope	1.00
727:							
Bonneyridge sandy loam	85	Well suited		Moderately suited		Well suited	
				Slope	0.50		
728:							
Bonneyridge sandy loam	85	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
729:							
Bonneyridge sandy loam	85	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
730:							
Tusccoll gravelly loam	60	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50	Rock fragments	0.50
						Low strength	0.50
Schott very gravelly loam	25	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
731:							
Tusccoll gravelly loam	50	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50	Rock fragments	0.50
						Low strength	0.50
Schott very gravelly loam	35	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00	Rock fragments	0.50
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
732:							
Bonepile taxadjunct, duripan substratum	90	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
734:							
Haploxerands medial sandy loam---------	55	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
				Slope	0.50		
801:							
Obstruction gravelly sandy loam	70	Well suited		Moderately suited		Poorly suited	
				Rock fragments	0.50	Low strength	1.00
				Slope	0.50		
802:							
Obskel very gravelly sandy loam	40	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
Obstruction gravelly sandy loam	40	Well suited		Poorly suited		Poorly suited	
				Slope	0.75	Low strength	1.00
				Rock fragments	0.50	Slope	0.50
803:							
Obskel very gravelly sandy loam	40	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
Obstruction gravelly sandy loam	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Rock fragments	0.50	Slope	1.00
804:							
Obskel very gravelly sandy loam	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
Obstruction gravelly sandy loam	25	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Rock fragments	0.50	Slope	1.00
805:							
Bottlehill very gravelly loam------	50	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
805:							
Walkermine very gravelly loam	20	Unsuited		Unsuited		Moderately suited	
		Restrictive layer	1.00	Rock fragments	1.00	Rock fragments	0.50
		Rock fragments	0.75	Restrictive layer	1.00		
				Slope	0.50		
Logtrain gravelly loam	20	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
				Slope	0.50		
806:							
Bottlehill very gravelly loam	50	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
Logtrain gravelly loam	20	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
807:							
Bottlehill very gravelly loam	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
Logtrain gravelly loam	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
808:							
Bottlehill very gravelly loam	45	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
Walkermine very gravelly loam	20	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Slope	1.00
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Restrictive layer	1.00		
Logtrain gravelly loam	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
809:							
Walkermine very gravelly loam	45	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Slope	1.00
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	0.50
		Slope	0.75	Restrictive layer	1.00		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
809:							
Bottlehill very gravelly loam	15	Poorly suited		Unsuited		Poorly suited	
		Slope	0.75	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Logtrain gravelly loam	15	Poorly suited		Unsuited		Poorly suited	
		Slope	0.75	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
810:							
Dixmine very gravelly loam	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50		
Mac gravelly loam	25	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Rock fragments	0.50		
				Stickiness; high plasticity index	0.50		
		Rock fragments	0.50				
Spine very gravelly loam	25	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
811:							
Powellton gravelly loam	50	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
Toadtown loam	40	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
				Slope	0.50		
812:							
Powellton gravelly loam	50	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
Toadtown loam	40	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.50	Slope	0.50
813:							
Powellton gravelly loam	50	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
813:							
Toadtown loam-------	40	Moderately suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
814:							
Mountyana gravelly loam----------	80	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
				Rock fragments	0.50		
815:							
Mountyana gravelly loam----------	80	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.50	Slope	0.50
				Rock fragments	0.50		
817:							
Lydon very gravelly medial coarse sandy loam----------	80	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
818:							
Lydon very gravelly medial coarse sandy loam----------	75	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
819:							
Lydon very gravelly medial coarse sandy loam----------	65	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
820:							
Lydon very gravelly medial coarse sandy loam----------	60	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
821:							
Lydon very gravelly medial coarse sandy loam----------	55	Poorly suited		Unsuited		Poorly suited	
		Slope	0.75	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
822:							
Bonepile gravelly medial loam--------	85	Moderately suited		Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	1.00
				Slope	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
823:							
Bonepile gravelly medial loam--------	85	Moderately suited		Poorly suited		Poorly suited	
		Rock fragments	0.50	Slope	0.75	Rock fragments	1.00
				Rock fragments	0.75	Slope	0.50
824:							
Beecee very gravelly medial loam--------	85	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75	Rock fragments	0.50
825:							
Beecee very gravelly medial loam--------	60	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75	Rock fragments	0.50
Lydon very gravelly medial coarse sandy loam---------------	20	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
826:							
Redbone gravelly medial sandy loam--	80	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
				Slope	0.50		
827:							
Redbone gravelly medial sandy loam--	80	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
829:							
Paradiso loam-------	80	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
830:							
Paradiso loam-------	75	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.50	Slope	0.50
831:							
Surnuf gravelly loam---------------	40	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
				Stickiness; high plasticity index	0.50		
Bigridge loam-------	30	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Rock fragments	0.75	Low strength	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
				Slope	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
831:							
Spine very gravelly loam	15	Moderately suited		Unsuited		Well suited	
		Rock fragments	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Slope	0.50		
				Stickiness; high plasticity index	0.50		
832:							
Surnuf gravelly loam	40	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
				Stickiness; high plasticity index	0.50		
Bigridge loam	30	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Low strength	0.50
		Rock fragments	0.50	Rock fragments	0.75	Sandiness	0.50
				Sandiness	0.50	Slope	0.50
Spine very gravelly loam	15	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Rock fragments	1.00	Slope	0.50
		Stickiness; high plasticity index	0.50	Slope	0.75		
				Stickiness; high plasticity index	0.50		
833:							
Surnuf gravelly loam	60	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Rock fragments	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
Bigridge loam	15	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75	Low strength	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
Spine very gravelly loam	15	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
834:							
Hietanen gravelly loam	50	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
Mac gravelly loam	30	Moderately suited		Moderately suited		Well suited	
		Stickiness; high plasticity index	0.50	Rock fragments	0.50		
		Rock fragments	0.50	Slope	0.50		
				Stickiness; high plasticity index	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
835:							
Hietanen gravelly loam	60	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
Mac gravelly loam	20	Moderately suited		Moderately suited		Well suited	
		Stickiness; high plasticity index	0.50	Slope	0.50		
				Rock fragments	0.50		
		Rock fragments	0.50	Stickiness; high plasticity index	0.50		
836:							
Hietanen gravelly loam	50	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
Mac gravelly loam	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Rock fragments	0.50		
				Stickiness; high plasticity index	0.50		
		Rock fragments	0.50				
Spine very gravelly loam	15	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Slope	1.00	Slope	0.50
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
837:							
Hietanen gravelly loam	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
Spine very gravelly loam	25	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
Mac gravelly loam	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Rock fragments	0.50		
		Rock fragments	0.50	Stickiness; high plasticity index	0.50		
838:							
Dixmine very gravelly loam	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
838:							
Spine very gravelly loam	25	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
Mac gravelly loam	25	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Rock fragments	0.50		
		Rock fragments	0.50	Stickiness; high plasticity index	0.50		
839:							
Chawanakee gravelly sandy loam	55	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
Billscabin gravelly sandy loam	35	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
				Slope	0.50		
841:							
Billscabin gravelly sandy loam	50	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	0.75	Rock fragments	0.50
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
Bonneyridge sandy loam	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
842:							
Billscabin gravelly sandy loam	60	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75	Rock fragments	0.50
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
Bonneyridge sandy loam	25	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
846:							
Bonneyridge sandy loam	60	Well suited		Moderately suited		Well suited	
				Slope	0.50		
Lewisflat loam	20	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
847:							
Bonneyridge sandy loam	60	Well suited		Poorly suited Slope	0.75	Moderately suited Slope	0.50
Lewisflat loam	20	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
848:							
Bonneyridge sandy loam	60	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope	1.00
Lewisflat loam	20	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope Low strength	1.00 0.50
850:							
Lewisflat loam	85	Well suited		Well suited		Moderately suited Low strength	0.50
851:							
Lewisflat loam	80	Well suited		Poorly suited Slope	0.75	Moderately suited Low strength Slope	0.50 0.50
852:							
Lewisflat loam	75	Moderately suited Slope	0.50	Unsuited Slope	1.00	Poorly suited Slope Low strength	1.00 0.50
860:							
Toadtown gravelly loam	60	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index Rock fragments	0.50 0.50 0.50	Poorly suited Low strength	1.00
Powellton silt loam	20	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Slope Stickiness; high plasticity index	0.50 0.50	Moderately suited Low strength	0.50
861:							
Toadtown gravelly loam	60	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index Rock fragments	0.75 0.50 0.50	Poorly suited Low strength	1.00
Powellton silt loam	20	Moderately suited Stickiness; high plasticity index	0.50	Poorly suited Slope Stickiness; high plasticity index	0.75 0.50	Moderately suited Low strength Slope	0.50 0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
862:							
Toadtown gravelly loam	60	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Slope	1.00
				Rock fragments	0.50		
Powellton silt loam	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
863:							
Toadtown gravelly loam	60	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Slope	1.00
				Rock fragments	0.50		
Powellton silt loam	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
880:							
Sites taxadjunct gravelly loam	50	Poorly suited		Poorly suited		Well suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
Jocal taxadjunct gravelly loam	35	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
881:							
Sites taxadjunct gravelly loam	50	Poorly suited		Poorly suited		Well suited	
		Stickiness; high plasticity index	0.75	Slope	0.75		
		Rock fragments	0.50	Stickiness; high plasticity index	0.75		
				Rock fragments	0.75		
Jocal taxadjunct gravelly loam	35	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
882:							
Sites taxadjunct gravelly loam	50	Poorly suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.75	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.75		
		Rock fragments	0.50	Rock fragments	0.75		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
882:							
Jocal taxadjunct gravelly loam------	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
883:							
Sites taxadjunct gravelly loam------	50	Poorly suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.75	Slope	1.00	Slope	1.00
				Stickiness; high plasticity index	0.75		
		Slope	0.50				
		Rock fragments	0.50	Rock fragments	0.75		
Jocal taxadjunct gravelly loam------	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
885:							
Rogerville silt loam	75	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
		Sandiness	0.50	Rock fragments	0.50	Sandiness	0.50
				Sandiness	0.50		
				Slope	0.50		
886:							
Rogerville silt loam	80	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
		Sandiness	0.50	Stickiness; high plasticity index	0.50	Sandiness	0.50
				Rock fragments	0.50	Slope	0.50
				Sandiness	0.50		
892:							
Rogerville silt loam	85	Moderately suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
		Sandiness	0.50	Rock fragments	0.50	Sandiness	0.50
				Sandiness	0.50		
893:							
Rogerville silt loam	85	Moderately suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.50	Slope	1.00	Slope	1.00
		Sandiness	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
		Slope	0.50	Rock fragments	0.50	Sandiness	0.50
				Sandiness	0.50		
902:							
Lumpkin gravelly medial sandy loam--	40	Unsuited		Unsuited		Moderately suited	
		Rock fragments	1.00	Rock fragments	1.00	Sandiness	0.50
		Sandiness	0.50	Sandiness	0.50		
				Slope	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
903:							
Mudwash gravelly medial sandy loam--	45	Moderately suited		Moderately suited		Poorly suited	
		Sandiness	0.50	Rock fragments	0.50	Low strength	1.00
				Slope	0.50	Sandiness	0.50
				Sandiness	0.50		
Timberisland very gravelly medial sandy loam---------	25	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Slope	1.00	Sandiness	0.50
		Sandiness	0.50	Rock fragments	0.75	Slope	0.50
				Sandiness	0.50		
Lavatop gravelly medial fine sandy loam---------------	20	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
904:							
Lavatop gravelly medial fine sandy loam---------------	20	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
905:							
Lumpkin gravelly medial sandy loam--	30	Unsuited		Unsuited		Poorly suited	
		Rock fragments	1.00	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	1.00	Sandiness	0.50
		Slope	0.50	Sandiness	0.50		
906:							
Lumpkin gravelly medial sandy loam--	30	Unsuited		Unsuited		Poorly suited	
		Rock fragments	1.00	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00	Sandiness	0.50
		Sandiness	0.50	Sandiness	0.50		
923:							
Powderhouse medial sandy loam---------	45	Moderately suited		Unsuited		Well suited	
		Rock fragments	0.50	Rock fragments	1.00		
				Slope	0.50		
McNair medial coarse sandy loam--	25	Moderately suited		Moderately suited		Poorly suited	
		Sandiness	0.50	Rock fragments	0.50	Low strength	1.00
				Sandiness	0.50	Sandiness	0.50
				Slope	0.50		
Greenwell medial sandy loam---------	20	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
				Slope	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
924:							
Powderhouse medial sandy loam---------	45	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Rock fragments	1.00	Slope	0.50
				Slope	0.75		
McNair medial coarse sandy loam--	25	Moderately suited		Poorly suited		Poorly suited	
		Sandiness	0.50	Slope	0.75	Low strength	1.00
				Rock fragments	0.50	Sandiness	0.50
				Sandiness	0.50	Slope	0.50
Greenwell medial sandy loam---------	20	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
925:							
Powderhouse medial sandy loam---------	45	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
McNair medial coarse sandy loam--	25	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Rock fragments	0.50	Slope	1.00
				Sandiness	0.50	Sandiness	0.50
Greenwell medial sandy loam---------	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
930:							
Timberisland very gravelly medial sandy loam---------	40	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Sandiness	0.50
		Sandiness	0.50	Sandiness	0.50		
				Slope	0.50		
931:							
Mudwash gravelly medial sandy loam--	25	Moderately suited		Poorly suited		Poorly suited	
		Sandiness	0.50	Slope	0.75	Low strength	1.00
				Rock fragments	0.50	Sandiness	0.50
				Sandiness	0.50	Slope	0.50
Timberisland very gravelly medial sandy loam---------	15	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Sandiness	0.50
		Sandiness	0.50	Rock fragments	0.75	Slope	0.50
				Sandiness	0.50		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
932:							
Mudwash gravelly medial sandy loam--	35	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Rock fragments	0.50	Slope	1.00
				Sandiness	0.50	Sandiness	0.50
934:							
Mudwash gravelly medial sandy loam--	80	Moderately suited		Moderately suited		Poorly suited	
		Sandiness	0.50	Rock fragments	0.50	Low strength	1.00
				Sandiness	0.50	Sandiness	0.50
				Slope	0.50		
940:							
Dejonah gravelly loam----------	50	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
				Slope	0.50		
Stagpoint loam------	30	Moderately suited		Moderately suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.50		
				Slope	0.50		
941:							
Dejonah gravelly loam----------	50	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
Stagpoint loam------	30	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.50		
942:							
Stagpoint loam------	50	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50		
Dejonah gravelly loam----------	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
948:							
Stagpoint loam------	55	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50		
Dejonah gravelly loam----------	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
949:							
Rogerville taxadjunct fine sandy loam---------	80	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
950:							
Powderhouse medial sandy loam---------	20	Moderately suited		Unsuited		Well suited	
		Rock fragments	0.50	Rock fragments	1.00		
				Slope	0.50		
951:							
Powderhouse medial sandy loam---------	20	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Rock fragments	1.00	Slope	0.50
				Slope	0.75		
960:							
Surnuf gravelly loam, high elevation----------	85	Moderately suited		Moderately suited		Well suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
				Rock fragments	0.50		
				Slope	0.50		
961:							
Surnuf gravelly loam, high elevation----------	85	Moderately suited		Moderately suited		Well suited	
		Stickiness; high plasticity index	0.50	Slope	0.50		
				Stickiness; high plasticity index	0.50		
				Rock fragments	0.50		
962:							
Surnuf gravelly loam, high elevation----------	85	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Slope	0.50
				Stickiness; high plasticity index	0.50		
				Rock fragments	0.50		
963:							
Surnuf gravelly loam, high elevation----------	85	Moderately suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
		Rock fragments	0.50	Stickiness; high plasticity index	0.50		

Table 11c.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Only the soils for which site index productivity information is available are listed. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
165yu:					
Holland loam--------	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Hoda loam----------	25	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Hotaw loam----------	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
173yu:					
Hotaw loam----------	45	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Chawanakee gravelly sandy loam---------	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Holland loam--------	15	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
176yu:					
Jocal loam----------	80	Well suited		Well suited	
188yu:					
Mariposa taxadjunct gravelly loam------	80	Poorly suited		Poorly suited	
		Slope	0.50	Restrictive layer	0.50
				Slope	0.50
189yu:					
Mariposa taxadjunct gravelly loam------	80	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
				Restrictive layer	0.50
206:					
Islandbar sandy loam---------------	60	Well suited		Well suited	
Chawanakee gravelly sandy loam---------	30	Well suited		Well suited	
207:					
Islandbar sandy loam---------------	60	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Chawanakee gravelly sandy loam---------	30	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
208:					
Islandbar sandy loam	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Chawanakee gravelly sandy loam	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
209:					
Islandbar sandy loam	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Chawanakee gravelly sandy loam	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
210:					
Featherfalls sandy loam	50	Well suited		Well suited	
Islandbar sandy loam	35	Well suited		Well suited	
211:					
Featherfalls sandy loam	55	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Islandbar sandy loam	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
212:					
Featherfalls sandy loam	55	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Islandbar sandy loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
213:					
Featherfalls sandy loam	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Islandbar sandy loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
214:					
Crystalhill gravelly coarse sandy loam	35	Well suited		Well suited	

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
214:					
Oregongulch gravelly sandy loam	20	Well suited		Well suited	
Craigsaddle coarse sandy loam	20	Well suited		Well suited	
215:					
Crystalhill gravelly coarse sandy loam	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Oregongulch gravelly sandy loam	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Craigsaddle coarse sandy loam	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
216:					
Crystalhill gravelly coarse sandy loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Oregongulch gravelly sandy loam	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Craigsaddle coarse sandy loam	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
217:					
Crystalhill gravelly coarse sandy loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Oregongulch gravelly sandy loam	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Craigsaddle coarse sandy loam	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
218:					
Chawanakee gravelly sandy loam	15	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
219:					
Chawanakee gravelly sandy loam	15	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
221yu:					
Sites loam	85	Well suited		Well suited	
222yu:					
Sites loam	85	Well suited		Well suited	
225yu:					
Sites gravelly loam, bedrock substratum	80	Well suited		Well suited	
226yu:					
Sites gravelly loam, bedrock substratum	80	Well suited		Well suited	
227yu:					
Sites gravelly loam, bedrock substratum	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
242yu:					
Surnuf loam	80	Well suited		Well suited	
243yu:					
Surnuf loam	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
244yu:					
Surnuf loam	80	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
245:					
Surnuf loam	80	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
252yu:					
Woodleaf gravelly loam	80	Poorly suited		Poorly suited	
		Rock fragments	0.50	Restrictive layer	0.50
253yu:					
Woodleaf gravelly loam	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Restrictive layer	0.50
561:					
Bigridge loam	50	Well suited		Well suited	
562:					
Bigridge loam	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
563:					
Bigridge loam	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
564:					
Bigridge loam-------	50	Unsuited Slope	 1.00	Unsuited Slope	 1.00
580:					
Surnuf taxadjunct loam---------------	40	Poorly suited Stickiness; high plasticity index	 0.50	Well suited	
Griffgulch very gravelly silt loam	25	Poorly suited Rock fragments	 0.50	Well suited	
581:					
Surnuf taxadjunct loam---------------	65	Poorly suited Slope Stickiness; high plasticity index	 0.50 0.50	Poorly suited Slope	 0.50
Griffgulch very gravelly silt loam	20	Poorly suited Rock fragments Slope	 0.50 0.50	Poorly suited Slope	 0.50
582:					
Surnuf taxadjunct loam---------------	50	Unsuited Slope Stickiness; high plasticity index	 1.00 0.50	Unsuited Slope	 1.00
Griffgulch very gravelly silt loam	35	Unsuited Slope Rock fragments	 1.00 0.50	Unsuited Slope	 1.00
583:					
Surnuf taxadjunct loam---------------	50	Unsuited Slope Stickiness; high plasticity index	 1.00 0.50	Unsuited Slope	 1.00
Griffgulch very gravelly silt loam	35	Unsuited Slope Rock fragments	 1.00 0.50	Unsuited Slope	 1.00
629:					
Slideland gravelly loam---------------	80	Well suited		Well suited	
630:					
Slideland gravelly loam---------------	80	Poorly suited Slope	 0.50	Poorly suited Slope	 0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
631:					
Slideland gravelly loam	80	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
650:					
Schott very gravelly loam	65	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
651:					
Schott very gravelly loam	65	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
		Slope	0.50	Slope	0.50
652:					
Schott very gravelly loam	65	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
657:					
Bonneyridge sandy loam	35	Well suited		Well suited	
Chawanakee gravelly sandy loam	30	Well suited		Well suited	
658:					
Bonneyridge sandy loam	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Chawanakee gravelly sandy loam	30	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
659:					
Bonneyridge sandy loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Chawanakee gravelly sandy loam	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
660:					
Bonneyridge sandy loam	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Chawanakee gravelly sandy loam	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
665:					
Surnuf gravelly loam	40	Well suited		Well suited	

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
665:					
Bigridge loam-------	40	Well suited		Well suited	
666:					
Surnuf gravelly loam---------------	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Bigridge loam-------	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
667:					
Surnuf gravelly loam---------------	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Bigridge loam-------	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
668:					
Surnuf gravelly loam---------------	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Bigridge loam-------	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
674:					
Chawanakee gravelly sandy loam---------	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Bonneyridge sandy loam---------------	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
700:					
Flumewall gravelly sandy loam---------	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
				Rock fragments	0.50
701:					
Powellton gravelly loam---------------	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Obstruction gravelly sandy loam	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
702:					
Cerpone gravelly loam---------------	50	Poorly suited		Well suited	
		Rock fragments	0.50		

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
703:					
Cerpone gravelly loam	30	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
704:					
Cerpone gravelly loam	15	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
705:					
Cerpone gravelly loam	15	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
711:					
Dixmine very gravelly loam	45	Poorly suited		Well suited	
		Rock fragments	0.50		
Toadtown loam	40	Well suited		Well suited	
712:					
Dixmine very gravelly loam	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Toadtown loam	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
713:					
Dixmine very gravelly loam	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Toadtown loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
714:					
Dixmine very gravelly loam	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Toadtown loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
715:					
Logtrain gravelly loam	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
715:					
Bottlehill very gravelly loam------	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
Walkermine very gravelly loam------	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Rock fragments	0.50
716:					
Griffgulch very gravelly silt loam	40	Poorly suited		Well suited	
		Rock fragments	0.50		
Surnuf gravelly loam----------	40	Well suited		Well suited	
717:					
Griffgulch very gravelly silt loam	40	Poorly suited		Poorly suited	
		Rock fragments	0.50	Slope	0.50
		Slope	0.50		
Surnuf gravelly loam----------	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
718:					
Griffgulch very gravelly silt loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Surnuf gravelly loam----------	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
719:					
Griffgulch very gravelly silt loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Surnuf gravelly loam----------	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
721:					
Haploxerands, granitic till, medial sandy loam--	70	Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
722:					
Haploxerands, granitic till, medial sandy loam--	70	Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Slope	0.50
723:					
Haploxerands, granitic till, medial sandy loam--	70	Unsuited		Unsuited	
		Rock fragments	1.00	Slope	1.00
		Slope	1.00	Rock fragments	0.50
724:					
Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	0.50
725:					
Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Slope	0.50
726:					
Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Unsuited		Unsuited	
		Rock fragments	1.00	Slope	1.00
		Slope	1.00	Rock fragments	0.50
727:					
Bonneyridge sandy loam----------	85	Well suited		Well suited	
728:					
Bonneyridge sandy loam----------	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
729:					
Bonneyridge sandy loam----------	85	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
730:					
Tusccoll gravelly loam----------	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Schott very gravelly loam------	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
731:					
Tusccoll gravelly loam	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Schott very gravelly loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
732:					
Bonepile taxadjunct, duripan substratum	90	Unsuited		Unsuited	
		Rock fragments	1.00	Rock fragments	1.00
734:					
Haploxerands medial sandy loam	55	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
801:					
Obstruction gravelly sandy loam	70	Well suited		Well suited	
802:					
Obskel very gravelly sandy loam	40	Poorly suited		Poorly suited	
		Rock fragments	0.50	Slope	0.50
		Slope	0.50		
Obstruction gravelly sandy loam	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
803:					
Obskel very gravelly sandy loam	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Obstruction gravelly sandy loam	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
804:					
Obskel very gravelly sandy loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Obstruction gravelly sandy loam	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
805:					
Bottlehill very gravelly loam	50	Poorly suited		Unsuited	
		Rock fragments	0.50	Restrictive layer	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
805:					
Walkermine very gravelly loam	20	Unsuited		Unsuited	
		Restrictive layer	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Rock fragments	0.50
Logtrain gravelly loam	20	Well suited		Well suited	
806:					
Bottlehill very gravelly loam	50	Poorly suited		Unsuited	
		Rock fragments	0.50	Restrictive layer	1.00
		Slope	0.50	Slope	0.50
Logtrain gravelly loam	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
807:					
Bottlehill very gravelly loam	35	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Slope	1.00
Logtrain gravelly loam	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
808:					
Bottlehill very gravelly loam	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
Walkermine very gravelly loam	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Rock fragments	0.50
Logtrain gravelly loam	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
809:					
Walkermine very gravelly loam	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Rock fragments	0.50
Bottlehill very gravelly loam	15	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
Logtrain gravelly loam	15	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
810:					
Dixmine very gravelly loam------	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Mac gravelly loam---	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Spine very gravelly loam----------	25	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Slope	1.00
811:					
Powellton gravelly loam----------	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Toadtown loam-------	40	Well suited		Well suited	
812:					
Powellton gravelly loam----------	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Toadtown loam-------	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
813:					
Powellton gravelly loam----------	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Toadtown loam-------	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
814:					
Mountyana gravelly loam----------	80	Well suited		Well suited	
815:					
Mountyana gravelly loam----------	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
817:					
Lydon very gravelly medial coarse sandy loam----------	80	Poorly suited		Poorly suited	
		Rock fragments	0.50	Restrictive layer	0.50
818:					
Lydon very gravelly medial coarse sandy loam----------	75	Poorly suited		Poorly suited	
		Rock fragments	0.50	Restrictive layer	0.50
		Slope	0.50	Slope	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
819:					
Lydon very gravelly medial coarse sandy loam	65	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	0.50
820:					
Lydon very gravelly medial coarse sandy loam	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	0.50
821:					
Lydon very gravelly medial coarse sandy loam	55	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	0.50
822:					
Bonepile gravelly medial loam	85	Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	0.50
823:					
Bonepile gravelly medial loam	85	Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Slope	0.50
824:					
Beecee very gravelly medial loam	85	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
825:					
Beecee very gravelly medial loam	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Lydon very gravelly medial coarse sandy loam	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	0.50
826:					
Redbone gravelly meidal sandy loam	80	Well suited		Well suited	
827:					
Redbone gravelly medial sandy loam	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
829:					
Paradiso loam	80	Well suited		Well suited	

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
830:					
Paradiso loam-------	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
831:					
Surnuf gravelly loam---------------	40	Well suited		Well suited	
Bigridge loam-------	30	Well suited		Well suited	
Spine very gravelly loam---------------	15	Poorly suited		Unsuited	
		Rock fragments	0.50	Restrictive layer	1.00
832:					
Surnuf gravelly loam---------------	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Bigridge loam-------	30	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Spine very gravelly loam---------------	15	Poorly suited		Unsuited	
		Rock fragments	0.50	Restrictive layer	1.00
		Slope	0.50	Slope	0.50
833:					
Surnuf gravelly loam---------------	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Bigridge loam-------	15	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Spine very gravelly loam---------------	15	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Slope	1.00
834:					
Hietanen gravelly loam---------------	50	Well suited		Well suited	
Mac gravelly loam---	30	Poorly suited		Well suited	
		Rock fragments	0.50		
835:					
Hietanen gravelly loam---------------	60	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Mac gravelly loam---	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
836:					
Hietanen gravelly loam	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Mac gravelly loam	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Spine very gravelly loam	15	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
		Rock fragments	0.50	Slope	0.50
837:					
Hietanen gravelly loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Spine very gravelly loam	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
Mac gravelly loam	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
838:					
Dixmine very gravelly loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Spine very gravelly loam	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
Mac gravelly loam	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
839:					
Chawanakee gravelly sandy loam	55	Well suited		Well suited	
Billscabin gravelly sandy loam	35	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
841:					
Billscabin gravelly sandy loam	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Bonneyridge sandy loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
842:					
Billscabin gravelly sandy loam	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Bonneyridge sandy loam	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
846:					
Bonneyridge sandy loam	60	Well suited		Well suited	
Lewisflat loam	20	Well suited		Well suited	
847:					
Bonneyridge sandy loam	60	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Lewisflat loam	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
848:					
Bonneyridge sandy loam	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Lewisflat loam	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
850:					
Lewisflat loam	85	Well suited		Well suited	
851:					
Lewisflat loam	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
852:					
Lewisflat loam	75	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
860:					
Toadtown gravelly loam	60	Well suited		Well suited	
Powellton silt loam	20	Well suited		Well suited	
861:					
Toadtown gravelly loam	60	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Powellton silt loam	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
862:					
Toadtown gravelly loam	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Powellton silt loam	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
863:					
Toadtown gravelly loam	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Powellton silt loam	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
880:					
Sites taxadjunct gravelly loam	50	Poorly suited		Well suited	
		Rock fragments	0.50		
		Stickiness; high plasticity index	0.50		
Jocal taxadjunct gravelly loam	35	Well suited		Well suited	
881:					
Sites taxadjunct gravelly loam	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
		Stickiness; high plasticity index	0.50		
Jocal taxadjunct gravelly loam	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
882:					
Sites taxadjunct gravelly loam	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
		Stickiness; high plasticity index	0.50		
Jocal taxadjunct gravelly loam	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
883:					
Sites taxadjunct gravelly loam	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
		Stickiness; high plasticity index	0.50		

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
883:					
Jocal taxadjunct gravelly loam------	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
885:					
Rogerville silt loam	75	Well suited		Well suited	
886:					
Rogerville silt loam	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
892:					
Rogerville silt loam	85	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
893:					
Rogerville silt loam	85	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
902:					
Lumpkin gravelly medial sandy loam--	40	Unsuited		Unsuited	
		Rock fragments	1.00	Restrictive layer	1.00
				Rock fragments	1.00
903:					
Mudwash gravelly medial sandy loam--	45	Well suited		Well suited	
Timberisland very gravelly medial sandy loam---------	25	Poorly suited		Unsuited	
		Rock fragments	0.50	Rock fragments	1.00
		Slope	0.50	Slope	0.50
Lavatop gravelly medial fine sandy loam---------------	20	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
				Restrictive layer	0.50
904:					
Lavatop gravelly medial fine sandy loam---------------	20	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50
905:					
Lumpkin gravelly medial sandy loam--	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Restrictive layer	1.00
				Rock fragments	1.00

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
906:					
Lumpkin gravelly medial sandy loam--	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Restrictive layer	1.00
				Rock fragments	1.00
923:					
Powderhouse medial sandy loam---------	45	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
McNair medial coarse sandy loam--	25	Well suited		Well suited	
Greenwell medial sandy loam---------	20	Well suited		Well suited	
924:					
Powderhouse medial sandy loam---------	45	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
		Slope	0.50	Slope	0.50
McNair medial coarse sandy loam--	25	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Greenwell medial sandy loam---------	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
925:					
Powderhouse medial sandy loam---------	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
McNair medial coarse sandy loam--	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Greenwell medial sandy loam---------	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
930:					
Timberisland very gravelly medial sandy loam---------	40	Poorly suited		Unsuited	
		Rock fragments	0.50	Rock fragments	1.00
931:					
Mudwash gravelly medial sandy loam--	25	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
931:					
Timberisland very gravelly medial sandy loam---------	15	Poorly suited		Unsuited	
		Rock fragments	0.50	Rock fragments	1.00
		Slope	0.50	Slope	0.50
932:					
Mudwash gravelly medial sandy loam--	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
934:					
Mudwash gravelly medial sandy loam--	80	Well suited		Well suited	
940:					
Dejonah gravelly loam---------------	50	Well suited		Well suited	
Stagpoint loam------	30	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
941:					
Dejonah gravelly loam---------------	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Stagpoint loam------	30	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
942:					
Stagpoint loam------	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Dejonah gravelly loam---------------	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
948:					
Stagpoint loam------	55	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Dejonah gravelly loam---------------	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
949:					
Rogerville taxadjunct fine sandy loam---------	80	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
950:					
Powderhouse medial sandy loam---------	20	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
951:					
Powderhouse medial sandy loam---------	20	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
		Slope	0.50	Slope	0.50
960:					
Surnuf gravelly loam, high elevation----------	85	Well suited		Well suited	
961:					
Surnuf gravelly loam, high elevation----------	85	Well suited		Well suited	
962:					
Surnuf gravelly loam, high elevation----------	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
963:					
Surnuf gravelly loam, high elevation----------	85	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00

Table 11d.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Only the soils for which site index productivity information is available are listed. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
165yu:							
Holland loam--------	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Hoda loam----------	25	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Hotaw loam----------	20	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
173yu:							
Hotaw loam----------	45	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Chawanakee gravelly sandy loam---------	20	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Holland loam--------	15	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
176yu:							
Jocal loam----------	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
188yu:							
Mariposa taxadjunct gravelly loam------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
189yu:							
Mariposa taxadjunct gravelly loam------	80	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
206:							
Islandbar sandy loam---------------	60	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Sandiness	0.50
Chawanakee gravelly sandy loam---------	30	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
207:							
Islandbar sandy loam	60	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
Chawanakee gravelly sandy loam	30	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
208:							
Islandbar sandy loam	60	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
Chawanakee gravelly sandy loam	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
209:							
Islandbar sandy loam	60	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
Chawanakee gravelly sandy loam	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
210:							
Featherfalls sandy loam	50	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Islandbar sandy loam	35	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Sandiness	0.50
211:							
Featherfalls sandy loam	55	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Islandbar sandy loam	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
212:							
Featherfalls sandy loam	55	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Islandbar sandy loam	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
213:							
Featherfalls sandy loam	45	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Islandbar sandy loam	35	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
214:							
Crystalhill gravelly coarse sandy loam	35	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
Oregongulch gravelly sandy loam	20	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Sandiness	0.50
Craigsaddle coarse sandy loam	20	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
215:							
Crystalhill gravelly coarse sandy loam	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Oregongulch gravelly sandy loam	20	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
Craigsaddle coarse sandy loam	20	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
216:							
Crystalhill gravelly coarse sandy loam	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Oregongulch gravelly sandy loam	20	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
Craigsaddle coarse sandy loam	20	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
217:							
Crystalhill gravelly coarse sandy loam	35	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Oregongulch gravelly sandy loam	20	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
Craigsaddle coarse sandy loam	20	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
218:							
Chawanakee gravelly sandy loam	15	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
219:							
Chawanakee gravelly sandy loam	15	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
221yu:							
Sites loam	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
222yu:							
Sites loam	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
225yu:							
Sites gravelly loam, bedrock substratum	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
226yu:							
Sites gravelly loam, bedrock substratum	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
227yu:							
Sites gravelly loam, bedrock substratum	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
242yu:							
Surnuf loam	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
243yu:							
Surnuf loam	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
244yu:							
Surnuf loam	80	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
245:							
Surnuf loam	80	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
252yu:							
Woodleaf gravelly loam	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
253yu:							
Woodleaf gravelly loam	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
561:							
Bigridge loam	50	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Sandiness	0.50
						Low strength	0.50
562:							
Bigridge loam	50	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Low strength	0.50
563:							
Bigridge loam	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Low strength	0.50
564:							
Bigridge loam	50	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Low strength	0.50
580:							
Surnuf taxadjunct loam	40	Slight		Slight		Moderately suited	
						Slope	0.50
						Low strength	0.50
Griffgulch very gravelly silt loam	25	Slight		Slight		Moderately suited	
						Slope	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
581:							
Surnuf taxadjunct loam	65	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Griffgulch very gravelly silt loam	20	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
582:							
Surnuf taxadjunct loam	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Griffgulch very gravelly silt loam	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
583:							
Surnuf taxadjunct loam	50	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Griffgulch very gravelly silt loam	35	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
629:							
Slideland gravelly loam	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
630:							
Slideland gravelly loam	80	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
						Low strength	0.50
631:							
Slideland gravelly loam	80	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
650:							
Schott very gravelly loam	65	Slight		Slight		Moderately suited	
						Rock fragments	0.50
						Sandiness	0.50
651:							
Schott very gravelly loam	65	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
652:							
Schott very gravelly loam	65	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
657:							
Bonneyridge sandy loam	35	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Chawanakee gravelly sandy loam	30	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
658:							
Bonneyridge sandy loam	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Chawanakee gravelly sandy loam	30	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
659:							
Bonneyridge sandy loam	35	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Chawanakee gravelly sandy loam	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
660:							
Bonneyridge sandy loam	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Chawanakee gravelly sandy loam	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
665:							
Surnuf gravelly loam	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
Bigridge loam	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Sandiness	0.50
						Low strength	0.50
666:							
Surnuf gravelly loam	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
666:							
Bigridge loam-------	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Low strength	0.50
667:							
Surnuf gravelly loam----------	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Bigridge loam-------	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Low strength	0.50
668:							
Surnuf gravelly loam----------	40	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Bigridge loam-------	40	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Low strength	0.50
674:							
Chawanakee gravelly sandy loam---------	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Bonneyridge sandy loam----------	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
700:							
Flumewall gravelly sandy loam---------	25	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
701:							
Powellton gravelly loam----------	40	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Obstruction gravelly sandy loam	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	1.00
702:							
Cerpone gravelly loam----------	50	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
703:							
Cerpone gravelly loam	30	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
704:							
Cerpone gravelly loam	15	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
705:							
Cerpone gravelly loam	15	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
711:							
Dixmine very gravelly loam	45	Slight		Slight		Moderately suited	
						Slope	0.50
Toadtown loam	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
712:							
Dixmine very gravelly loam	50	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
Toadtown loam	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
713:							
Dixmine very gravelly loam	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Toadtown loam	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
714:							
Dixmine very gravelly loam	50	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Toadtown loam	35	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
715:							
Logtrain gravelly loam	40	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
715:							
Bottlehill very gravelly loam------	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Walkermine very gravelly loam------	20	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
716:							
Griffgulch very gravelly silt loam	40	Slight		Slight		Moderately suited	
						Slope	0.50
Surnuf gravelly loam----------	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
717:							
Griffgulch very gravelly silt loam	40	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
Surnuf gravelly loam----------	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
718:							
Griffgulch very gravelly silt loam	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Surnuf gravelly loam----------	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
719:							
Griffgulch very gravelly silt loam	35	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Surnuf gravelly loam----------	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
721:							
Haploxerands, granitic till, medial sandy loam--	70	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Rock fragments	1.00
						Slope	1.00

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
722:							
Haploxerands, granitic till, medial sandy loam--	70	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
723:							
Haploxerands, granitic till, medial sandy loam--	70	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
724:							
Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Rock fragments	1.00
						Slope	0.50
725:							
Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
726:							
Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
727:							
Bonneyridge sandy loam----------	85	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
728:							
Bonneyridge sandy loam----------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
729:							
Bonneyridge sandy loam----------	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
730:							
Tusccoll gravelly loam----------	60	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Low strength	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
730:							
Schott very gravelly loam	25	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
731:							
Tusccoll gravelly loam	50	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Low strength	0.50
Schott very gravelly loam	35	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
732:							
Bonepile taxadjunct, duripan substratum	90	Slight		Slight		Poorly suited	
						Rock fragments	1.00
734:							
Haploxerands medial sandy loam	55	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
801:							
Obstruction gravelly sandy loam	70	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Low strength	1.00
						Slope	0.50
802:							
Obskel very gravelly sandy loam	40	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
Obstruction gravelly sandy loam	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	1.00
803:							
Obskel very gravelly sandy loam	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Obstruction gravelly sandy loam	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	1.00

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
804:							
Obskel very gravelly sandy loam	35	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Obstruction gravelly sandy loam	25	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	1.00
805:							
Bottlehill very gravelly loam------	50	Slight		Slight		Moderately suited	
						Slope	0.50
Walkermine very gravelly loam------	20	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Slope	1.00
						Rock fragments	0.50
Logtrain gravelly loam---------------	20	Slight		Slight		Moderately suited	
						Slope	0.50
806:							
Bottlehill very gravelly loam------	50	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
Logtrain gravelly loam---------------	20	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
807:							
Bottlehill very gravelly loam------	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Logtrain gravelly loam---------------	30	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
808:							
Bottlehill very gravelly loam------	45	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Walkermine very gravelly loam------	20	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Logtrain gravelly loam---------------	20	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
809:							
Walkermine very gravelly loam	45	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Bottlehill very gravelly loam	15	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Logtrain gravelly loam	15	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
810:							
Dixmine very gravelly loam	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Mac gravelly loam	25	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Spine very gravelly loam	25	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
811:							
Powellton gravelly loam	50	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
						Low strength	0.50
Toadtown loam	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
812:							
Powellton gravelly loam	50	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Toadtown loam	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
813:							
Powellton gravelly loam	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Toadtown loam	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
814:							
Mountyana gravelly loam	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
815:							
Mountyana gravelly loam	80	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
						Low strength	0.50
817:							
Lydon very gravelly medial coarse sandy loam	80	Slight		Slight		Well suited	
818:							
Lydon very gravelly medial coarse sandy loam	75	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
819:							
Lydon very gravelly medial coarse sandy loam	65	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
820:							
Lydon very gravelly medial coarse sandy loam	60	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
821:							
Lydon very gravelly medial coarse sandy loam	55	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
822:							
Bonepile gravelly medial loam	85	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Rock fragments	1.00
823:							
Bonepile gravelly medial loam	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
824:							
Beecee very gravelly medial loam	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
825:							
Beecee very gravelly medial loam	60	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
825:							
Lydon very gravelly medial coarse sandy loam	20	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
826:							
Redbone gravelly medial sandy loam	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
827:							
Redbone gravelly medial sandy loam	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
829:							
Paradiso loam	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
830:							
Paradiso loam	75	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
831:							
Surnuf gravelly loam	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
Bigridge loam	30	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Sandiness	0.50
						Low strength	0.50
Spine very gravelly loam	15	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
832:							
Surnuf gravelly loam	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Bigridge loam	30	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Low strength	0.50
Spine very gravelly loam	15	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
833:							
Surnuf gravelly loam	60	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
833:							
Bigridge loam-------	15	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Low strength	0.50
Spine very gravelly loam----------	15	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
834:							
Hietanen gravelly loam----------	50	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
Mac gravelly loam---	30	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
835:							
Hietanen gravelly loam----------	60	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Mac gravelly loam---	20	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
836:							
Hietanen gravelly loam----------	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Mac gravelly loam---	20	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Spine very gravelly loam----------	15	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
837:							
Hietanen gravelly loam----------	35	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Spine very gravelly loam----------	25	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Mac gravelly loam---	20	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
838:							
Dixmine very gravelly loam------	35	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
838:							
Spine very gravelly loam	25	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Mac gravelly loam	25	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
839:							
Chawanakee gravelly sandy loam	55	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
Billscabin gravelly sandy loam	35	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Rock fragments	0.50
						Slope	0.50
						Sandiness	0.50
841:							
Billscabin gravelly sandy loam	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
Bonneyridge sandy loam	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
842:							
Billscabin gravelly sandy loam	60	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
Bonneyridge sandy loam	25	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
846:							
Bonneyridge sandy loam	60	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Lewisflat loam	20	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
847:							
Bonneyridge sandy loam	60	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Lewisflat loam	20	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
848:							
Bonneyridge sandy loam	60	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Lewisflat loam	20	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
850:							
Lewisflat loam	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
851:							
Lewisflat loam	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
852:							
Lewisflat loam	75	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
860:							
Toadtown gravelly loam	60	Slight		Slight		Poorly suited	
						Low strength	1.00
						Slope	0.50
Powellton silt loam	20	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
861:							
Toadtown gravelly loam	60	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
						Low strength	1.00
Powellton silt loam	20	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
862:							
Toadtown gravelly loam	60	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	1.00
Powellton silt loam	20	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
863:							
Toadtown gravelly loam	60	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	1.00

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
863:							
Powellton silt loam	20	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
880:							
Sites taxadjunct gravelly loam	50	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Jocal taxadjunct gravelly loam	35	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
881:							
Sites taxadjunct gravelly loam	50	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Jocal taxadjunct gravelly loam	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
882:							
Sites taxadjunct gravelly loam	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Jocal taxadjunct gravelly loam	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
883:							
Sites taxadjunct gravelly loam	50	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Jocal taxadjunct gravelly loam	40	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
885:							
Rogerville silt loam	75	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Sandiness	0.50
						Low strength	0.50
886:							
Rogerville silt loam	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Low strength	0.50
892:							
Rogerville silt loam	85	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Low strength	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
893:							
Rogerville silt loam	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Low strength	0.50
902:							
Lumpkin gravelly medial sandy loam--	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Sandiness	0.50
903:							
Mudwash gravelly medial sandy loam--	45	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Low strength	1.00
						Slope	0.50
						Sandiness	0.50
Timberisland very gravelly medial sandy loam---------	25	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
Lavatop gravelly medial fine sandy loam---------------	20	Slight		Slight		Moderately suited	
						Slope	0.50
904:							
Lavatop gravelly medial fine sandy loam---------------	20	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
905:							
Lumpkin gravelly medial sandy loam--	30	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
906:							
Lumpkin gravelly medial sandy loam--	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
923:							
Powderhouse medial sandy loam---------	45	Slight		Slight		Moderately suited	
						Slope	0.50
McNair medial coarse sandy loam--	25	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Low strength	1.00
						Slope	0.50
						Sandiness	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
923:							
Greenwell medial sandy loam---------	20	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
924:							
Powderhouse medial sandy loam---------	45	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
McNair medial coarse sandy loam--	25	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	1.00
						Sandiness	0.50
Greenwell medial sandy loam---------	20	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
925:							
Powderhouse medial sandy loam---------	45	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
McNair medial coarse sandy loam--	25	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	1.00
						Sandiness	0.50
Greenwell medial sandy loam---------	20	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
930:							
Timberisland very gravelly medial sandy loam---------	40	Slight		Slight		Moderately suited	
						Slope	0.50
						Sandiness	0.50
931:							
Mudwash gravelly medial sandy loam--	25	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	1.00
						Sandiness	0.50
Timberisland very gravelly medial sandy loam---------	15	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
						Sandiness	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
932:							
Mudwash gravelly medial sandy loam--	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	1.00
						Sandiness	0.50
934:							
Mudwash gravelly medial sandy loam--	80	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Low strength	1.00
						Slope	0.50
						Sandiness	0.50
940:							
Dejonah gravelly loam----------	50	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Stagpoint loam------	30	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
941:							
Dejonah gravelly loam----------	50	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Stagpoint loam------	30	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
942:							
Stagpoint loam------	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Dejonah gravelly loam----------	30	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
948:							
Stagpoint loam------	55	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Dejonah gravelly loam----------	35	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
949:							
Rogerville taxadjunct fine sandy loam---------	80	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Landslides	0.50
950:							
Powderhouse medial sandy loam---------	20	Slight		Slight		Moderately suited	
						Slope	0.50

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
951: Powderhouse medial sandy loam	20	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
960: Surnuf gravelly loam, high elevation	85	Slight		Moderate Slope/erodibility	0.50	Well suited	
961: Surnuf gravelly loam, high elevation	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
962: Surnuf gravelly loam, high elevation	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
963: Surnuf gravelly loam, high elevation	85	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance

(Data on vegetative species that have an entry in the "Percent cover by species" column were collected using standards described in the "National Forestry Handbook." Vegetative species that do not have an entry in the "Percent cover by species" column were observed during soil mapping)

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
100:				
Anita----------	---	---	Italian ryegrass (LOPEM2)	---
			Medusahead (TACA8)	---
			Soft chess (BRHOH)	---
			Mouse barley (HOMAG)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Coyote thistle (ERCA33)	---
			Soft blow wives (ACMO2)	---
			Navarretia (NAVAR)	---
			Brodiaea (BRODI)	---
			White meadowfoam (LIALA)	---
Galt----------	---	---	Italian ryegrass (LOPEM2)	---
			Medusahead (TACA8)	---
			Soft chess (BRHOH)	---
			Mouse barley (HOMAG)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Coyote thistle (ERCA33)	---
			Soft blow wives (ACMO2)	---
			Clover (TRIFO)	---
			Filaree (ERODI)	---
			Navarretia (NAVAR)	---
			Brodiaea (BRODI)	---
			Spikerush (ELEOC)	---
			Hairgrass (DESCH)	---
			Wild onion (ALLIU)	---
			Hayfield tarweed (HECOL3)	---
			White meadowfoam (LIALA)	---
104.				
Bosquejo				
105:				
Busacca---------	---	---	Valley oak (QULO)	---
108:				
Tuscan----------	---	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Clover (TRIFO)	---
			Medusahead (TACA8)	---
			Mediterranean barley (HOMUL)	---
			Ryegrass (LOLIU)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Popcornflower (PLAGI)	---
			Brodiaea (BRODI)	---
			Shootingstar (DODEC)	---
			Dandelion (TARAX)	---
			Butter-n-eggs (TRERE2)	---
			Goldfields (LASTH)	---
			Fremont's tidytips (LAFR2)	---
			Navarretia (NAVAR)	---
			Hairypink (PEDU2)	---
			Soft blow wives (ACMO2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
108:				
Igo----------	---	---	Soft chess (BRHOH)	---
			Medusahead (TACA8)	---
			Hairypink (PEDU2)	---
			Red brome (BRRU2)	---
			Filaree (ERODI)	---
			Navarretia (NAVAR)	---
			Brodiaea (BRODI)	---
			Wild oat (AVFA)	---
			Fremont's tidytips (LAFR2)	---
			Butter-n-eggs (TRERE2)	---
			Goldfields (LASTH)	---
			Yellow starthistle (CESO3)	---
			Pepperweed (LEPID)	---
Anita----------	---	---	Italian ryegrass (LOPEM2)	---
			Medusahead (TACA8)	---
			Soft chess (BRHOH)	---
			Mouse barley (HOMAG)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Coyote thistle (ERCA33)	---
			Soft blow wives (ACMO2)	---
			Navarretia (NAVAR)	---
			Brodiaea (BRODI)	---
			White meadowfoam (LIALA)	---
109, 110. Bosquejo				
111yu:				
Auburn----------	---	---	Burclover (MEHI)	5
			Clover (TRIFO)	5
			Filaree (ERODI)	5
			Foxtail fescue (FEME)	5
			Mouse barley (HOMAG)	5
			Red brome (BRRU2)	5
			Ripgut brome (BRDI3)	5
			Soft chess (BRHOH)	30
			Wild oat (AVFA)	15
Sobrante--------	---	---	Mediterranean barley (HOMUL)	5
			Blue oak (QUDO)	5
			Burclover (MEHI)	10
			Clover (TRIFO)	5
			Filaree (ERODI)	5
			Foxtail fescue (FEME)	5
			Interior live oak (QUWI2)	5
			Mouse barley (HOMAG)	5
			Nitgrass (GAVE3)	5
			Ripgut brome (BRDI3)	10
			Soft chess (BRHOH)	25
			Wild oat (AVFA)	10

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
114yu:				
Auburn	---	---	Blue oak (QUDO)	5
			Buckbrush (CECU)	5
			Burclover (MEHI)	10
			Clover (TRIFO)	5
			Filaree (ERODI)	5
			Foothill pine (PISA2)	1
			Foxtail fescue (FEME)	5
			Interior live oak (QUWI2)	5
			Mouse barley (HOMAG)	5
			Red brome (BRRU2)	5
			Ripgut brome (BRDI3)	5
			Soft chess (BRHOH)	25
			Whiteleaf manzanita (ARMA)	5
			Wild oat (AVFA)	10
			Pacific poison oak (TODI)	---
Sobrante	---	---	Blue oak (QUDO)	5
			Buckbrush (CECU)	5
			Clover (TRIFO)	5
			Filaree (ERODI)	5
			Foothill pine (PISA2)	1
			Interior live oak (QUWI2)	5
			Ripgut brome (BRDI3)	10
			Silver hairgrass (AICA)	5
			Soft chess (BRHOH)	25
			Wild oat (AVFA)	10
			Pacific poison oak (TODI)	---
			Hedgehog dogtail (CYEC)	---
118:				
Xerorthents, tailings	---	---	California sycamore (PLRA)	---
			Clover (TRIFO)	---
			Cottonwood (POPUL)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Ripgut brome (BRDI3)	---
			Soft chess (BRHOH)	---
			Valley oak (QULO)	---
			Wild oat (AVFA)	---
			Willow (SALIX)	---
			Pacific poison oak (TODI)	---
118co.				
Clear Lake				
119:				
Xerorthents, tailings	---	---	California sycamore (PLRA)	---
			Clover (TRIFO)	---
			Cottonwood (POPUL)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Ripgut brome (BRDI3)	---
			Soft chess (BRHOH)	---
			Valley oak (QULO)	---
			Wild oat (AVFA)	---
			Willow (SALIX)	---
			Pacific poison oak (TODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
119:				
Urban land.				
119yu:				
Auburn----------	---	---	Blue oak (QUDO)	5
			Buckbrush (CECU)	5
			Burclover (MEHI)	10
			Clover (TRIFO)	5
			Filaree (ERODI)	5
			Foothill pine (PISA2)	1
			Foxtail fescue (FEME)	5
			Interior live oak (QUWI2)	5
			Mouse barley (HOMAG)	5
			Red brome (BRRU2)	5
			Ripgut brome (BRDI3)	5
			Soft chess (BRHOH)	25
			Whiteleaf manzanita (ARMA)	5
			Wild oat (AVFA)	10
			Pacific poison oak (TODI)	---
Sobrante--------	---	---	Blue oak (QUDO)	5
			Buckbrush (CECU)	5
			Clover (TRIFO)	5
			Filaree (ERODI)	5
			Foothill pine (PISA2)	1
			Interior live oak (QUWI2)	5
			Ripgut brome (BRDI3)	10
			Silver hairgrass (AICA)	5
			Soft chess (BRHOH)	25
			Wild oat (AVFA)	10
			Pacific poison oak (TODI)	---
			Hedgehog dogtail (CYEC)	---
Rock outcrop.				
120.				
Gridley taxadjunct				
121:				
Boga.				
Loemstone.				
121su.				
Columbia				
125:				
Gridley taxadjunct-----	---	---	Orchardgrass (DAGL)	---
			Curly dock (RUCR)	---
			Mouse barley (HOMAG)	---
			Italian ryegrass (LOPEM2)	---
			Alameda County thistle (CIQU2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
125: Calcic Haploxerolls	---	---	Orchardgrass (DAGL)	---
			Curly dock (RUCR)	---
			Mouse barley (HOMAG)	---
			Italian ryegrass (LOPEM2)	---
			Saltgrass (DISTI)	---
			Alameda County thistle (CIQU2)	---
126. Liveoak				
127. Gridley taxadjunct				
130: Eastbiggs	---	---	Wild oat (AVFA)	---
			Vetch (VICIA)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Mouse barley (HOMAG)	---
			Clover (TRIFO)	---
			Butter-n-eggs (TRERE2)	---
			White brodiaea (TRHY3)	---
133: Eastbiggs	---	---	Wild oat (AVFA)	---
			Vetch (VICIA)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Mouse barley (HOMAG)	---
			Clover (TRIFO)	---
			Butter-n-eggs (TRERE2)	---
			White brodiaea (TRHY3)	---
Galt.				
136: Duric Xerarents, cut.				
Duric Xerarents, fill.				
Eastbiggs.				
138su. Liveoak				
139su: Liveoak taxadjunct.				
Galt taxadjunct.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
143su:				
Marcum.				
Gridley.				
149yu:				
Flanly----------	---	---	California buckthorn (FRCAC5)	5
			Blue oak (QUDO)	5
			Blue wildrye (ELGL)	5
			Buckbrush (CECU)	5
			Chokeberry (PHOTI)	5
			Foothill pine (PISA2)	1
			Interior live oak (QUWI2)	5
			Ripgut brome (BRDI3)	10
			Sticky whiteleaf manzanita (ARVI4)	5
			Wild oat (AVFA)	15
			Pacific poison oak (TODI)	---
			Hedgehog dogtail (CYEC)	---
150:				
Columbia--------	California sycamore (PLRA)	---	Himalaya blackberry (RUDI2)	---
	Fremont cottonwood (POFR2)		Pacific poison oak (TODI)	---
	Valley oak (QULO)	---	Curly dock (RUCR)	---
	Black walnut (JUNI)	---	Italian ryegrass (LOPEM2)	---
			Johnsongrass (SOHA)	---
			California wild grape (VICA5)	---
			Carex (CAREX)	---
150su.				
Olashes				
151yu:				
Flanly----------	---	---	California buckthorn (FRCAC5)	5
			Blue oak (QUDO)	5
			Blue wildrye (ELGL)	5
			Buckbrush (CECU)	5
			Chokeberry (PHOTI)	5
			Foothill pine (PISA2)	1
			Interior live oak (QUWI2)	5
			Ripgut brome (BRDI3)	10
			Sticky whiteleaf manzanita (ARVI4)	5
			Wild oat (AVFA)	15
			Pacific poison oak (TODI)	---
			Hedgehog dogtail (CYEC)	---
152:				
Gianella--------	Valley oak (QULO)	---	---	---
	Fremont cottonwood (POFR2)	---		
153:				
Gianella--------	Valley oak (QULO)	---	California wild grape (VICA5)	---
	Fremont cottonwood (POFR2)	---	California wildrose (ROCA2)	---
			Douglas sagewort (ARDO3)	---
			Coyote willow (SAEX)	---
			Pacific poison oak (TODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
154:				
Gianella--------	Valley oak (QULO)	---	California wild grape (VICA5)	---
	Fremont cottonwood (POFR2)	---	California wildrose (ROCA2)	---
			Douglas sagewort (ARDO3)	---
			Coyote willow (SAEX)	---
			Pacific poison oak (TODI)	---
158:				
Gianella--------	Valley oak (QULO)	---	Blackberry (RUBUS)	---
	Fremont cottonwood (POFR2)	---	Willow (SALIX)	---
			Pacific poison oak (TODI)	---
	California sycamore (PLRA)	---		
160:				
Gianella--------	Valley oak (QULO)	---	---	---
	Fremont cottonwood (POFR2)	---		
161:				
Gianella--------	Valley oak (QULO)	---	---	---
	Fremont cottonwood (POFR2)	---		
162:				
Gianella--------	Valley oak (QULO)	---	---	---
	Fremont cottonwood (POFR2)	---		
163yu.				
Holillipah				
165yu:				
Holland---------	---	---	California black oak (QUKE)	---
			Blue wildrye (ELGL)	---
			Bluegrass (POA)	---
			Canyon live oak (QUCH2)	---
			Deerbrush (CEIN3)	---
			Fescue (FESTU)	---
			Manzanita (ARCTO3)	---
			Mountain brome (BRMA4)	---
			Mountain misery (CHFO)	---
			Western brackenfern (PTAQ)	---
Hoda------------	---	---	California black oak (QUKE)	10
			Blue wildrye (ELGL)	5
			Bluegrass (POA)	5
			Canyon live oak (QUCH2)	5
			Deerbrush (CEIN3)	5
			Fescue (FESTU)	5
			Mountain misery (CHFO)	15
			Sticky whiteleaf manzanita (ARVI4)	10
			Western brackenfern (PTAQ)	5

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
165yu:				
Hotaw----------	---	---	California black oak (QUKE)	---
			Blue wildrye (ELGL)	---
			Bluegrass (POA)	---
			Buckbrush (CECU)	---
			Canyon live oak (QUCH2)	---
			Deerbrush (CEIN3)	---
			Fescue (FESTU)	---
			Mountain misery (CHFO)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Western brackenfern (PTAQ)	---
173yu:				
Hotaw----------	---	---	California black oak (QUKE)	---
			Blue wildrye (ELGL)	---
			Bluegrass (POA)	---
			Buckbrush (CECU)	---
			Canyon live oak (QUCH2)	---
			Deerbrush (CEIN3)	---
			Fescue (FESTU)	---
			Mountain misery (CHFO)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Western brackenfern (PTAQ)	---
Chawanakee------	---	---	Buckbrush (CECU)	---
			Manzanita (ARCTO3)	---
			Mountain misery (CHFO)	---
Holland---------	---	---	California black oak (QUKE)	---
			Blue wildrye (ELGL)	---
			Bluegrass (POA)	---
			Canyon live oak (QUCH2)	---
			Deerbrush (CEIN3)	---
			Fescue (FESTU)	---
			Manzanita (ARCTO3)	---
			Mountain brome (BRMA4)	---
			Mountain misery (CHFO)	---
			Western brackenfern (PTAQ)	---
175:				
Farwell---------	---	---	Deergrass (MURI2)	---
			Meadow barley (HOBR2)	---
			Purple needlegrass (NAPU4)	---
			Soap plant (CHLOR3)	---
176:				
Farwell---------	---	---	Deergrass (MURI2)	---
			Meadow barley (HOBR2)	---
			Purple needlegrass (NAPU4)	---
			Soap plant (CHLOR3)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
176yu:				
Jocal----------	---	---	Bluegrass (POA)	5
			Broadleaf starflower (TRBOL)	5
			Common snowberry (SYAL)	5
			Deerbrush (CEIN3)	5
			Mountain brome (BRMA4)	5
			Mountain misery (CHFO)	5
			Sticky whiteleaf manzanita (ARVI4)	5
			Western brackenfern (PTAQ)	5
			Western princes pine (CHUMO2)	5
			Pacific poison oak (TODI)	---
177:				
Farwell---------	---	---	Deergrass (MURI2)	---
			Meadow barley (HOBR2)	---
			Purple needlegrass (NAPU4)	---
			Soap plant (CHLOR3)	---
178:				
Arbuckle--------	---	---	Mouse barley (HOMAG)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Ripgut brome (BRDI3)	---
			Italian ryegrass (LOPEM2)	---
			Filaree (ERODI)	---
			Yellow starthistle (CESO3)	---
			Brodiaea (BRODI)	---
			Bluedicks (DICAC5)	---
			Checkerbloom (SIDAL)	---
179:				
Moda taxadjunct	---	---	Coyote thistle (ERCA33)	---
			Goldfields (LASTH)	---
			Hayfield tarweed (HECOL3)	---
			Fitch's spikeweed (HEFI)	---
			Popcornflower (PLAGI)	---
			Filaree (ERODI)	---
			Carex (CAREX)	---
			Yellow starthistle (CESO3)	---
			Italian ryegrass (LOPEM2)	---
			Wild oat (AVFA)	---
			Ripgut brome (BRDI3)	---
			Mouse barley (HOMAG)	---
			Soft chess (BRHOH)	---
			Medusahead (TACA8)	---
			Purple needlegrass (NAPU4)	---
			Fiddleneck (AMSIN)	---
			Brodiaea (BRODI)	---
			Popcornflower (PLAGI)	---
			Curly dock (RUCR)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
179:				
Arbuckle--------	---	---	Mouse barley (HOMAG)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Ripgut brome (BRDI3)	---
			Italian ryegrass (LOPEM2)	---
			Filaree (ERODI)	---
			Yellow starthistle (CESO3)	---
			Brodiaea (BRODI)	---
			Bluedicks (DICAC5)	---
			Checkerbloom (SIDAL)	---
180:				
Dodgeland-------	---	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Hayfield tarweed (HECOL3)	---
181:				
Dodgeland-------	---	---	Fitch's spikeweed (HEFI)	---
			Italian ryegrass (LOPEM2)	---
			Cattail (TYPHA)	---
			Filaree (ERODI)	---
			Hardstem tule (SCACO4)	---
			Soft chess (BRHOH)	---
188yu:				
Mariposa taxadjunct-----	---	---	California black oak (QUKE)	---
			Blue wildrye (ELGL)	---
			Bluegrass (POA)	---
			Canyon live oak (QUCH2)	---
			Fescue (FESTU)	---
			Mountain brome (BRMA4)	---
			Mountain misery (CHFO)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Tanoak (LIDE3)	---
189:				
Esquon----------	---	---	Italian ryegrass (LOPEM2)	---
			Curly dock (RUCR)	---
			Spikerush (ELEOC)	---
189yu:				
Mariposa taxadjunct-----	---	---	California black oak (QUKE)	---
			Blue wildrye (ELGL)	---
			Bluegrass (POA)	---
			Canyon live oak (QUCH2)	---
			Fescue (FESTU)	---
			Mountain brome (BRMA4)	---
			Mountain misery (CHFO)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Tanoak (LIDE3)	---
196yu.				
Mildred				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
200:				
Parrott	Valley oak (QULO)	---	Beardless wildrye (LETR5)	---
			Blue elderberry (SANIC5)	---
			Coyotebrush (BAPI)	---
			Pacific poison oak (TODI)	---
201:				
Parrott	Valley oak (QULO)	---	Beardless wildrye (LETR5)	---
			Blue elderberry (SANIC5)	---
			Coyotebrush (BAPI)	---
			Pacific poison oak (TODI)	---
203.				
Kusalslough				
205:				
Parrott	Valley oak (QULO)	---	Beardless wildrye (LETR5)	---
			Blue elderberry (SANIC5)	---
			Coyotebrush (BAPI)	---
			Pacific poison oak (TODI)	---
Vermet	Valley oak (QULO)	---	Arnica (ARNIC)	---
	California walnut (JUCA)	---	Beardless wildrye (LETR5)	---
			Bermudagrass (CYDA)	---
			Cattail (TYPHA)	---
			Cocklebur (XANTH2)	---
			Curly dock (RUCR)	---
			Rush (JUNCU)	---
			Coyotebrush (BAPI)	---
			Blue elderberry (SANIC5)	---
			California blackberry (RUUR)	---
			Pacific poison oak (TODI)	---
			California wild grape (VICA5)	---
206:				
Islandbar	Ponderosa pine (PIPO)	50	Canyon live oak (QUCH2)	15
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	15	California black oak (QUKE)	5
	Tanoak (LIDE3)	5	Pacific poison oak (TODI)	---
	Douglas-fir (PSME)	5	Whiteleaf manzanita (ARMA)	3
	California black oak (QUKE)	5	Deerbrush (CEIN3)	3
	Pacific madrone (ARME)	3	Toyon (HEAR5)	3
			Tanoak (LIDE3)	3
			Western thimbleberry (RUPA)	3
			Iris (IRIS)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
206:				
Chawanakee------	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	21
	Sugar pine (PILA)	18		
	Incense cedar (CADE27)	15	Canyon live oak (QUCH2)	18
	Canyon live oak (QUCH2)	10	Incense cedar (CADE27)	4
	California black oak (QUKE)	8	Interior live oak (QUWI2)	3
			California black oak (QUKE)	2
	Douglas-fir (PSME)	8		
	Pacific madrone (ARME)	2	Pacific poison oak (TODI)	---
	Interior live oak (QUWI2)	2	Sugar pine (PILA)	2
			Deerbrush (CEIN3)	2
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	2
			Ponderosa pine (PIPO)	1
			Iris (IRIS)	1
207:				
Islandbar-------	Ponderosa pine (PIPO)	50	Canyon live oak (QUCH2)	15
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	15	California black oak (QUKE)	5
	Tanoak (LIDE3)	5		
	Douglas-fir (PSME)	5	Pacific poison oak (TODI)	---
	California black oak (QUKE)	5	Whiteleaf manzanita (ARMA)	3
	Pacific madrone (ARME)	3	Deerbrush (CEIN3)	3
			Toyon (HEAR5)	3
			Tanoak (LIDE3)	3
			Western thimbleberry (RUPA)	3
			Iris (IRIS)	1
Chawanakee------	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	21
	Sugar pine (PILA)	18		
	Incense cedar (CADE27)	15	Canyon live oak (QUCH2)	18
	Canyon live oak (QUCH2)	10	Incense cedar (CADE27)	4
	California black oak (QUKE)	8	Interior live oak (QUWI2)	3
			California black oak (QUKE)	2
	Douglas-fir (PSME)	8		
	Pacific madrone (ARME)	2	Pacific poison oak (TODI)	---
	Interior live oak (QUWI2)	2	Sugar pine (PILA)	2
			Deerbrush (CEIN3)	2
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	2
			Ponderosa pine (PIPO)	1
			Iris (IRIS)	1
208:				
Islandbar-------	Ponderosa pine (PIPO)	50	Canyon live oak (QUCH2)	15
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	15	California black oak (QUKE)	5
	Tanoak (LIDE3)	5		
	Douglas-fir (PSME)	5	Pacific poison oak (TODI)	---
	California black oak (QUKE)	5	Whiteleaf manzanita (ARMA)	3
	Pacific madrone (ARME)	3	Deerbrush (CEIN3)	3
			Toyon (HEAR5)	3
			Tanoak (LIDE3)	3
			Western thimbleberry (RUPA)	3
			Iris (IRIS)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
208:				
Chawanakee------	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	21
	Sugar pine (PILA)	18		
	Incense cedar (CADE27)	15	Canyon live oak (QUCH2)	18
	Canyon live oak (QUCH2)	10	Incense cedar (CADE27)	4
	California black oak (QUKE)	8	Interior live oak (QUWI2)	3
	Douglas-fir (PSME)	8	California black oak (QUKE)	2
	Pacific madrone (ARME)	2	Pacific poison oak (TODI)	---
	Interior live oak (QUWI2)	2	Sugar pine (PILA)	2
			Deerbrush (CEIN3)	2
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	2
			Ponderosa pine (PIPO)	1
			Iris (IRIS)	1
209:				
Islandbar-------	Ponderosa pine (PIPO)	50	Canyon live oak (QUCH2)	15
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	15	California black oak (QUKE)	5
	Tanoak (LIDE3)	5	Pacific poison oak (TODI)	---
	Douglas-fir (PSME)	5	Whiteleaf manzanita (ARMA)	3
	California black oak (QUKE)	5	Deerbrush (CEIN3)	3
	Pacific madrone (ARME)	3	Toyon (HEAR5)	3
			Tanoak (LIDE3)	3
			Western thimbleberry (RUPA)	3
			Iris (IRIS)	1
Chawanakee------	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	21
	Sugar pine (PILA)	18		
	Incense cedar (CADE27)	15	Canyon live oak (QUCH2)	18
	Canyon live oak (QUCH2)	10	Incense cedar (CADE27)	4
	California black oak (QUKE)	8	Interior live oak (QUWI2)	3
	Douglas-fir (PSME)	8	California black oak (QUKE)	2
	Pacific madrone (ARME)	2	Pacific poison oak (TODI)	---
	Interior live oak (QUWI2)	2	Sugar pine (PILA)	2
			Deerbrush (CEIN3)	2
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	2
			Ponderosa pine (PIPO)	1
			Iris (IRIS)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
210:				
Featherfalls----	Douglas-fir (PSME)	31	California honeysuckle (LOHI2)	15
	Ponderosa pine (PIPO)	20		
	California black oak (QUKE)	18	Tanoak (LIDE3)	8
			Whiteleaf manzanita (ARMA)	7
	Incense cedar (CADE27)	11		
	Pacific madrone (ARME)	9	Pacific madrone (ARME)	7
	Canyon live oak (QUCH2)	6	Pacific poison oak (TODI)	---
	Tanoak (LIDE3)	4	Incense cedar (CADE27)	6
	Sugar pine (PILA)	1	California black oak (QUKE)	5
			Douglas-fir (PSME)	4
			Deerbrush (CEIN3)	2
			Pacific dogwood (CONU4)	2
			Toyon (HEAR5)	2
			Canyon live oak (QUCH2)	2
			Western brackenfern (PTAQ)	1
			Broadleaf starflower (TRBOL)	1
			Sierra gooseberry (RIRO)	1
Islandbar-------	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	16
	Douglas-fir (PSME)	15		
	California black oak (QUKE)	15	Incense cedar (CADE27)	10
			Deerbrush (CEIN3)	8
	Pacific madrone (ARME)	13	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	12	Toyon (HEAR5)	8
	Canyon live oak (QUCH2)	5	California honeysuckle (LOHI2)	8
	Bigleaf maple (ACMA3)	3		
			Pacific madrone (ARME)	3
			Douglas-fir (PSME)	3
			California torreya (TOCA)	3
			Carex (CAREX)	1
			Canyon live oak (QUCH2)	1
			California black oak (QUKE)	1
211:				
Featherfalls----	Douglas-fir (PSME)	31	California honeysuckle (LOHI2)	15
	Ponderosa pine (PIPO)	20		
	California black oak (QUKE)	18	Tanoak (LIDE3)	8
			Whiteleaf manzanita (ARMA)	7
	Incense cedar (CADE27)	11		
	Pacific madrone (ARME)	9	Pacific madrone (ARME)	7
	Canyon live oak (QUCH2)	6	Pacific poison oak (TODI)	---
	Tanoak (LIDE3)	4	Incense cedar (CADE27)	6
	Sugar pine (PILA)	1	California black oak (QUKE)	5
			Douglas-fir (PSME)	4
			Deerbrush (CEIN3)	2
			Pacific dogwood (CONU4)	2
			Toyon (HEAR5)	2
			Canyon live oak (QUCH2)	2
			Western brackenfern (PTAQ)	1
			Broadleaf starflower (TRBOL)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
211:				
Islandbar-------	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	16
	Douglas-fir (PSME)	15		
	California black oak (QUKE)	15	Incense cedar (CADE27)	10
			Deerbrush (CEIN3)	8
	Pacific madrone (ARME)	13	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	12	Toyon (HEAR5)	8
	Canyon live oak (QUCH2)	5	California honeysuckle (LOHI2)	8
	Bigleaf maple (ACMA3)	3		
			Pacific madrone (ARME)	3
			Douglas-fir (PSME)	3
			California torreya (TOCA)	3
			Carex (CAREX)	1
			Canyon live oak (QUCH2)	1
			California black oak (QUKE)	1
212:				
Featherfalls----	Douglas-fir (PSME)	31	California honeysuckle (LOHI2)	15
	Ponderosa pine (PIPO)	20		
	California black oak (QUKE)	18	Tanoak (LIDE3)	8
			Whiteleaf manzanita (ARMA)	7
	Incense cedar (CADE27)	11		
	Pacific madrone (ARME)	9	Pacific madrone (ARME)	7
	Canyon live oak (QUCH2)	6	Pacific poison oak (TODI)	---
	Tanoak (LIDE3)	4	Incense cedar (CADE27)	6
	Sugar pine (PILA)	1	California black oak (QUKE)	5
			Douglas-fir (PSME)	4
			Deerbrush (CEIN3)	2
			Pacific dogwood (CONU4)	2
			Toyon (HEAR5)	2
			Canyon live oak (QUCH2)	2
			Western brackenfern (PTAQ)	1
			Broadleaf starflower (TRBOL)	1
			Sierra gooseberry (RIRO)	1
Islandbar-------	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	16
	Douglas-fir (PSME)	15		
	California black oak (QUKE)	15	Incense cedar (CADE27)	10
			Deerbrush (CEIN3)	8
	Pacific madrone (ARME)	13	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	12	Toyon (HEAR5)	8
	Canyon live oak (QUCH2)	5	California honeysuckle (LOHI2)	8
	Bigleaf maple (ACMA3)	3		
			Pacific madrone (ARME)	3
			Douglas-fir (PSME)	3
			California torreya (TOCA)	3
			Carex (CAREX)	1
			Canyon live oak (QUCH2)	1
			California black oak (QUKE)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
213:				
Featherfalls----	Douglas-fir (PSME)	31	California honeysuckle (LOHI2)	15
	Ponderosa pine (PIPO)	20	Tanoak (LIDE3)	8
	California black oak (QUKE)	18	Whiteleaf manzanita (ARMA)	7
	Incense cedar (CADE27)	11	Pacific madrone (ARME)	7
	Pacific madrone (ARME)	9	Pacific poison oak (TODI)	---
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	4	California black oak (QUKE)	5
	Sugar pine (PILA)	1	Douglas-fir (PSME)	4
			Deerbrush (CEIN3)	2
			Pacific dogwood (CONU4)	2
			Toyon (HEAR5)	2
			Canyon live oak (QUCH2)	2
			Western brackenfern (PTAQ)	1
			Broadleaf starflower (TRBOL)	1
			Sierra gooseberry (RIRO)	1
Islandbar-------	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	16
	Douglas-fir (PSME)	15	Incense cedar (CADE27)	10
	California black oak (QUKE)	15	Deerbrush (CEIN3)	8
	Pacific madrone (ARME)	13	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	12	Toyon (HEAR5)	8
	Canyon live oak (QUCH2)	5	California honeysuckle (LOHI2)	8
	Bigleaf maple (ACMA3)	3	Pacific madrone (ARME)	3
			Douglas-fir (PSME)	3
			California torreya (TOCA)	3
			Carex (CAREX)	1
			Canyon live oak (QUCH2)	1
			California black oak (QUKE)	1
214:				
Crystalhill-----	Ponderosa pine (PIPO)	52	Whiteleaf manzanita (ARMA)	35
	Canyon live oak (QUCH2)	18	Toyon (HEAR5)	10
	California black oak (QUKE)	12	Deerbrush (CEIN3)	8
	Foothill pine (PISA2)	7	Pacific poison oak (TODI)	---
	Interior live oak (QUWI2)	5	Canyon live oak (QUCH2)	5
	Pacific madrone (ARME)	3	California black oak (QUKE)	5
	Incense cedar (CADE27)	3	Ponderosa pine (PIPO)	3
			Tall Oregon grape (MAAQ2)	3
			Pacific madrone (ARME)	1
			California honeysuckle (LOHI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
214:				
Oregongulch-----	Ponderosa pine (PIPO)	28	Canyon live oak (QUCH2)	14
	Canyon live oak (QUCH2)	18	Whiteleaf manzanita (ARMA)	13
	Interior live oak (QUWI2)	18		
	Pacific madrone (ARME)	12	Pacific madrone (ARME)	12
	California black oak (QUKE)	12	Toyon (HEAR5)	7
			Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	7	Interior live oak (QUWI2)	7
	Foothill pine (PISA2)	5	California black oak (QUKE)	5
			Incense cedar (CADE27)	4
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	1
			Ponderosa pine (PIPO)	1
Craigsaddle-----	Ponderosa pine (PIPO)	24	Canyon live oak (QUCH2)	15
	Canyon live oak (QUCH2)	24	Whiteleaf manzanita (ARMA)	12
	Interior live oak (QUWI2)	14		
	Pacific madrone (ARME)	10	Toyon (HEAR5)	8
	California black oak (QUKE)	10	Pacific poison oak (TODI)	---
			Interior live oak (QUWI2)	8
	Incense cedar (CADE27)	9	Hedgehog dogtail (CYEC)	7
	Foothill pine (PISA2)	7	Wild oat (AVFA)	5
	Blue oak (QUDO)	2	Pacific madrone (ARME)	4
			Incense cedar (CADE27)	3
			California buckthorn (FRCAT2)	3
			Ponderosa pine (PIPO)	3
			Foothill pine (PISA2)	3
			Cheatgrass (BRTE)	3
			Flatspine stickweed (LAOCO)	3

			California honeysuckle (LOHI2)	2
			California black oak (QUKE)	1
Rock outcrop.				
215:				
Crystalhill-----	Ponderosa pine (PIPO)	52	Whiteleaf manzanita (ARMA)	35
	Canyon live oak (QUCH2)	18	Toyon (HEAR5)	10
	California black oak (QUKE)	12	Deerbrush (CEIN3)	8
	Foothill pine (PISA2)	7	Pacific poison oak (TODI)	---
	Interior live oak (QUWI2)	5	Canyon live oak (QUCH2)	5
	Pacific madrone (ARME)	3	California black oak (QUKE)	5
	Incense cedar (CADE27)	3	Ponderosa pine (PIPO)	3
			Tall Oregon grape (MAAQ2)	3
			Pacific madrone (ARME)	1
			California honeysuckle (LOHI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
215:				
Oregongulch-----	Ponderosa pine (PIPO)	28	Canyon live oak (QUCH2)	14
	Canyon live oak (QUCH2)	18	Whiteleaf manzanita (ARMA)	13
	Interior live oak (QUWI2)	18	Pacific madrone (ARME)	12
	Pacific madrone (ARME)	12	Toyon (HEAR5)	7
	California black oak (QUKE)	12	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	7	Interior live oak (QUWI2)	7
	Foothill pine (PISA2)	5	California black oak (QUKE)	5
			Incense cedar (CADE27)	4
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	1
			Ponderosa pine (PIPO)	1
Craigsaddle-----	Ponderosa pine (PIPO)	24	Canyon live oak (QUCH2)	15
	Canyon live oak (QUCH2)	24	Whiteleaf manzanita (ARMA)	12
	Interior live oak (QUWI2)	14	Toyon (HEAR5)	8
	Pacific madrone (ARME)	10	Pacific poison oak (TODI)	---
	California black oak (QUKE)	10	Interior live oak (QUWI2)	8
	Incense cedar (CADE27)	9	Hedgehog dogtail (CYEC)	7
	Foothill pine (PISA2)	7	Wild oat (AVFA)	5
	Blue oak (QUDO)	2	Pacific madrone (ARME)	4
			Incense cedar (CADE27)	3
			California buckthorn (FRCAT2)	3
			Ponderosa pine (PIPO)	3
			Foothill pine (PISA2)	3
			Cheatgrass (BRTE)	3
			Flatspine stickweed (LAOCO)	3
			California honeysuckle (LOHI2)	---
			California black oak (QUKE)	2
				1
Rock outcrop.				
216:				
Crystalhill-----	Ponderosa pine (PIPO)	52	Whiteleaf manzanita (ARMA)	35
	Canyon live oak (QUCH2)	18	Toyon (HEAR5)	10
	California black oak (QUKE)	12	Deerbrush (CEIN3)	8
	Foothill pine (PISA2)	7	Pacific poison oak (TODI)	---
	Interior live oak (QUWI2)	5	Canyon live oak (QUCH2)	5
	Pacific madrone (ARME)	3	California black oak (QUKE)	5
	Incense cedar (CADE27)	3	Ponderosa pine (PIPO)	3
			Tall Oregon grape (MAAQ2)	3
			Pacific madrone (ARME)	1
			California honeysuckle (LOHI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
216:				
Oregongulch-----	Ponderosa pine (PIPO)	28	Canyon live oak (QUCH2)	14
	Canyon live oak (QUCH2)	18	Whiteleaf manzanita (ARMA)	13
	Interior live oak (QUWI2)	18		
	Pacific madrone (ARME)	12	Pacific madrone (ARME)	12
	California black oak (QUKE)	12	Toyon (HEAR5)	7
			Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	7	Interior live oak (QUWI2)	7
	Foothill pine (PISA2)	5	California black oak (QUKE)	5
			Incense cedar (CADE27)	4
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	1
			Ponderosa pine (PIPO)	1
Craigsaddle-----	Ponderosa pine (PIPO)	24	Canyon live oak (QUCH2)	15
	Canyon live oak (QUCH2)	24	Whiteleaf manzanita (ARMA)	12
	Interior live oak (QUWI2)	14		
	Pacific madrone (ARME)	10	Toyon (HEAR5)	8
	California black oak (QUKE)	10	Pacific poison oak (TODI)	---
			Interior live oak (QUWI2)	8
	Incense cedar (CADE27)	9	Hedgehog dogtail (CYEC)	7
	Foothill pine (PISA2)	7	Wild oat (AVFA)	5
	Blue oak (QUDO)	2	Pacific madrone (ARME)	4
			Incense cedar (CADE27)	3
			California buckthorn (FRCAT2)	3
			Ponderosa pine (PIPO)	3
			Foothill pine (PISA2)	3
			Cheatgrass (BRTE)	3
			Flatspine stickweed (LAOCO)	3
			California honeysuckle (LOHI2)	2
			California black oak (QUKE)	1
Rock outcrop.				
217:				
Crystalhill-----	Ponderosa pine (PIPO)	52	Whiteleaf manzanita (ARMA)	35
	Canyon live oak (QUCH2)	18	Toyon (HEAR5)	10
	California black oak (QUKE)	12	Deerbrush (CEIN3)	8
	Foothill pine (PISA2)	7	Pacific poison oak (TODI)	---
	Interior live oak (QUWI2)	5	Canyon live oak (QUCH2)	5
	Pacific madrone (ARME)	3	California black oak (QUKE)	5
	Incense cedar (CADE27)	3	Ponderosa pine (PIPO)	3
			Tall Oregon grape (MAAQ2)	3
			Pacific madrone (ARME)	1
			California honeysuckle (LOHI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
217:				
Oregongulch-----	Ponderosa pine (PIPO)	28	Canyon live oak (QUCH2)	14
	Canyon live oak (QUCH2)	18	Whiteleaf manzanita (ARMA)	13
	Interior live oak (QUWI2)	18	Pacific madrone (ARME)	12
	Pacific madrone (ARME)	12	Toyon (HEAR5)	7
	California black oak (QUKE)	12	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	7	Interior live oak (QUWI2)	7
	Foothill pine (PISA2)	5	California black oak (QUKE)	5
			Incense cedar (CADE27)	4
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	1
			Ponderosa pine (PIPO)	1
Craigsaddle-----	Ponderosa pine (PIPO)	24	Canyon live oak (QUCH2)	15
	Canyon live oak (QUCH2)	24	Whiteleaf manzanita (ARMA)	12
	Interior live oak (QUWI2)	14	Toyon (HEAR5)	8
	Pacific madrone (ARME)	10	Pacific poison oak (TODI)	---
	California black oak (QUKE)	10	Interior live oak (QUWI2)	8
	Incense cedar (CADE27)	9	Hedgehog dogtail (CYEC)	7
	Foothill pine (PISA2)	7	Wild oat (AVFA)	5
	Blue oak (QUDO)	2	Pacific madrone (ARME)	4
			Incense cedar (CADE27)	3
			California buckthorn (FRCAT2)	3
			Ponderosa pine (PIPO)	3
			Foothill pine (PISA2)	3
			Cheatgrass (BRTE)	3
			Flatspine stickweed (LAOCO)	3
			California honeysuckle (LOHI2)	2
			California black oak (QUKE)	1
Rock outcrop.				
218:				
Rock outcrop.				
Lithic Xerorthents----	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	California black oak (QUKE)	---	Whiteleaf manzanita (ARMA)	---
	Whiteleaf manzanita (ARMA)	---	California black oak (QUKE)	---
			Ponderosa pine (PIPO)	---
			Pacific poison oak (TODI)	---
			Sugar pine (PILA)	---
			Incense cedar (CADE27)	---
			Douglas-fir (PSME)	---
			Redbud (CERCI2)	---
			Pacific dogwood (CONU4)	---
			Sierra coffeeberry (FRRUR)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
218:				
Chawanakee------	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	21
	Sugar pine (PILA)	18		
	Incense cedar (CADE27)	15	Canyon live oak (QUCH2)	18
	Canyon live oak (QUCH2)	10	Incense cedar (CADE27)	4
	California black oak (QUKE)	8	Interior live oak (QUWI2)	3
			California black oak (QUKE)	2
	Douglas-fir (PSME)	8		
	Pacific madrone (ARME)	2	Pacific poison oak (TODI)	---
	Interior live oak (QUWI2)	2	Sugar pine (PILA)	2
			Deerbrush (CEIN3)	2
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	2
			Ponderosa pine (PIPO)	1
			Iris (IRIS)	1
219:				
Rock outcrop.				
Lithic Xerorthents----	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	California black oak (QUKE)	---	Whiteleaf manzanita (ARMA)	---
	Whiteleaf manzanita (ARMA)	---	California black oak (QUKE)	---
			Ponderosa pine (PIPO)	---
			Pacific poison oak (TODI)	---
			Sugar pine (PILA)	---
			Incense cedar (CADE27)	---
			Douglas-fir (PSME)	---
			Redbud (CERCI2)	---
			Pacific dogwood (CONU4)	---
			Sierra coffeeberry (FRRUR)	---
Chawanakee------	Ponderosa pine (PIPO)	37	Whiteleaf manzanita (ARMA)	21
	Sugar pine (PILA)	18		
	Incense cedar (CADE27)	15	Canyon live oak (QUCH2)	18
	Canyon live oak (QUCH2)	10	Incense cedar (CADE27)	4
	California black oak (QUKE)	8	Interior live oak (QUWI2)	3
			California black oak (QUKE)	2
	Douglas-fir (PSME)	8		
	Pacific madrone (ARME)	2	Pacific poison oak (TODI)	---
	Interior live oak (QUWI2)	2	Sugar pine (PILA)	2
			Deerbrush (CEIN3)	2
			California buckthorn (FRCAT2)	2
			California honeysuckle (LOHI2)	2
			Ponderosa pine (PIPO)	1
			Iris (IRIS)	1
220:				
Esquon----------	---	---	Italian ryegrass (LOPEM2)	---
			Curly dock (RUCR)	---
			Spikerush (ELEOC)	---
Clear Lake.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
221yu:				
Sites----------	---	---	California black oak (QUKE)	---
			Blue wildrye (ELGL)	---
			Bluegrass (POA)	---
			Deerbrush (CEIN3)	---
			Fescue (FESTU)	---
			Mountain brome (BRMA4)	---
			Mountain misery (CHFO)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Western brackenfern (PTAQ)	---
			Pacific poison oak (TODI)	---
222yu:				
Sites----------	---	---	California black oak (QUKE)	---
			Blue wildrye (ELGL)	---
			Bluegrass (POA)	---
			Deerbrush (CEIN3)	---
			Fescue (FESTU)	---
			Mountain brome (BRMA4)	---
			Mountain misery (CHFO)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Western brackenfern (PTAQ)	---
			Pacific poison oak (TODI)	---
225yu:				
Sites----------	---	---	California black oak (QUKE)	---
			Blue wildrye (ELGL)	---
			Bluegrass (POA)	---
			Deerbrush (CEIN3)	---
			Fescue (FESTU)	---
			Mountain brome (BRMA4)	---
			Mountain misery (CHFO)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Western brackenfern (PTAQ)	---
			Pacific poison oak (TODI)	---
226yu:				
Sites----------	---	---	California black oak (QUKE)	---
			Blue wildrye (ELGL)	---
			Bluegrass (POA)	---
			Deerbrush (CEIN3)	---
			Fescue (FESTU)	---
			Mountain brome (BRMA4)	---
			Mountain misery (CHFO)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Western brackenfern (PTAQ)	---
			Pacific poison oak (TODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
227yu:				
Sites	---	---	California black oak (QUKE)	---
			Blue wildrye (ELGL)	---
			Bluegrass (POA)	---
			Deerbrush (CEIN3)	---
			Fescue (FESTU)	---
			Mountain brome (BRMA4)	---
			Mountain misery (CHFO)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Western brackenfern (PTAQ)	---
			Pacific poison oak (TODI)	---
242yu:				
Surnuf	---	---	California black oak (QUKE)	---
			California scrub oak (QUDU)	---
			Blue wildrye (ELGL)	---
			Chokeberry (PHOTI)	---
			Deerbrush (CEIN3)	---
			Iris (IRIS)	---
			Mountain misery (CHFO)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Tanoak (LIDE3)	---
			Western brackenfern (PTAQ)	---
			Pacific poison oak (TODI)	---
243yu:				
Surnuf	---	---	California black oak (QUKE)	---
			California scrub oak (QUDU)	---
			Blue wildrye (ELGL)	---
			Chokeberry (PHOTI)	---
			Deerbrush (CEIN3)	---
			Iris (IRIS)	---
			Mountain misery (CHFO)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Tanoak (LIDE3)	---
			Western brackenfern (PTAQ)	---
			Pacific poison oak (TODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
244yu:				
Surnuf----------	---	---	California black oak (QUKE)	---
			California scrub oak (QUDU)	---
			Blue wildrye (ELGL)	---
			Chokeberry (PHOTI)	---
			Deerbrush (CEIN3)	---
			Iris (IRIS)	---
			Mountain misery (CHFO)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Tanoak (LIDE3)	---
			Western brackenfern (PTAQ)	---
			Pacific poison oak (TODI)	---
245:				
Surnuf----------	---	---	California black oak (QUKE)	---
			California scrub oak (QUDU)	---
			Blue wildrye (ELGL)	---
			Chokeberry (PHOTI)	---
			Deerbrush (CEIN3)	---
			Iris (IRIS)	---
			Mountain misery (CHFO)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Tanoak (LIDE3)	---
			Western brackenfern (PTAQ)	---
			Pacific poison oak (TODI)	---
248yu. Trainer				
250:				
Llanoseco-------	---	---	Valley oak (QULO)	---
			Blue elderberry (SANIC5)	---
			Coyotebrush (BAPI)	---
252:				
Whitecabin------	---	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Hayfield tarweed (HECOL3)	---
			Fitch's spikeweed (HEFI)	---
			Prickly lettuce (LASE)	---
			Italian ryegrass (LOPEM2)	---
			Cocklebur (XANTH2)	---
			Bermudagrass (CYDA)	---
			Dallisgrass (PADI3)	---
			Spikerush (ELEOC)	---
			Curly dock (RUCR)	---
			Wildrye (ELYMU)	---
			Meadow barley (HOBR2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
252:				
Ordferry--------	---	---	Ryegrass (LOLIU)	---
			Medusahead (TACA8)	---
			Meadow barley (HOBR2)	---
			Ripgut brome (BRDI3)	---
			Soft chess (BRHOH)	---
			Italian ryegrass (LOPEM2)	---
			Hayfield tarweed (HECOL3)	---
			Fitch's spikeweed (HEFI)	---
			Prickly lettuce (LASE)	---
			Plantain (PLANT)	---
			Curly dock (RUCR)	---
252yu:				
Woodleaf--------	---	---	Jepson ceanothus (CEJE)	---
			Blue wildrye (ELGL)	---
			Broadleaf starflower (TRBOL)	---
			Common snowberry (SYAL)	---
			Leather oak (QUDU4)	---
			Prostrate ceanothus (CEPR)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Wildrye (ELYMU)	---
253yu:				
Woodleaf--------	---	---	Jepson ceanothus (CEJE)	---
			Blue wildrye (ELGL)	---
			Broadleaf starflower (TRBOL)	---
			Common snowberry (SYAL)	---
			Leather oak (QUDU4)	---
			Prostrate ceanothus (CEPR)	---
			Sticky whiteleaf manzanita (ARVI4)	---
			Wildrye (ELYMU)	---
255:				
Whitecabin------	---	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Hayfield tarweed (HECOL3)	---
			Fitch's spikeweed (HEFI)	---
			Prickly lettuce (LASE)	---
			Italian ryegrass (LOPEM2)	---
			Cocklebur (XANTH2)	---
			Bermudagrass (CYDA)	---
			Dallisgrass (PADI3)	---
			Spikerush (ELEOC)	---
			Curly dock (RUCR)	---
			Wildrye (ELYMU)	---
			Meadow barley (HOBR2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
255:				
Ordferry--------	---	---	Ryegrass (LOLIU)	---
			Medusahead (TACA8)	---
			Meadow barley (HOBR2)	---
			Ripgut brome (BRDI3)	---
			Soft chess (BRHOH)	---
			Italian ryegrass (LOPEM2)	---
			Hayfield tarweed (HECOL3)	---
			Fitch's spikeweed (HEFI)	---
			Prickly lettuce (LASE)	---
			Plantain (PLANT)	---
			Curly dock (RUCR)	---
256:				
Whitecabin------	---	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Hayfield tarweed (HECOL3)	---
			Fitch's spikeweed (HEFI)	---
			Prickly lettuce (LASE)	---
			Italian ryegrass (LOPEM2)	---
			Cocklebur (XANTH2)	---
			Bermudagrass (CYDA)	---
			Dallisgrass (PADI3)	---
			Spikerush (ELEOC)	---
			Curly dock (RUCR)	---
			Wildrye (ELYMU)	---
			Meadow barley (HOBR2)	---
257:				
Llanoseco-------	---	---	Valley oak (QULO)	---
			Blue elderberry (SANIC5)	---
			Coyotebrush (BAPI)	---
258.				
Codora				
260:				
Ordferry--------	---	---	Ryegrass (LOLIU)	---
			Medusahead (TACA8)	---
			Meadow barley (HOBR2)	---
			Ripgut brome (BRDI3)	---
			Soft chess (BRHOH)	---
			Italian ryegrass (LOPEM2)	---
			Hayfield tarweed (HECOL3)	---
			Fitch's spikeweed (HEFI)	---
			Prickly lettuce (LASE)	---
			Plantain (PLANT)	---
			Curly dock (RUCR)	---
			White meadowfoam (LIALA)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
280:				
Columbia taxadjunct-----	---	---	California wild grape (VICA5)	---
			Bulrush (SCIRP)	---
			Carex (CAREX)	---
			Cocklebur (XANTH2)	---
			Curly dock (RUCR)	---
			Mint (MENTH)	---
			Willow (SALIX)	---
			Valley oak (QULO)	---
			California sycamore (PLRA)	---
			Common buttonbush (CEOC2)	---
			California wildrose (ROCA2)	---
			Coyotebrush (BAPI)	---
			Hardstem tule (SCACO4)	---
			Arroyo willow (SALA6)	---
			Beardless wildrye (LETR5)	---
			Cattail (TYPHA)	---
			Himalaya blackberry (RUDI2)	---
290:				
Perkins---------	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
			Wild oat (AVFA)	---
			Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
300:				
Redsluff--------	Blue oak (QUDO)	---	Yellow starthistle (CESO3)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Mediterranean barley (HOMUL)	---
	Valley oak (QULO)	---		
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Pacific poison oak (TODI)	---
			Filaree (ERODI)	---
			Medusahead (TACA8)	---
			Clover (TRIFO)	---
			Ripgut brome (BRDI3)	---
			Vetch (VICIA)	---
			Ryegrass (LOLIU)	---
			Red brome (BRRU2)	---
			Fiddleneck (AMSIN)	---
			Bluedicks (DICAC5)	---
			Valley oak (QULO)	---
			Lupine (LUPIN)	---
			Brodiaea (BRODI)	---
			Mouse barley (HOMAG)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
301:				
Wafap----------	---	---	Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Clover (TRIFO)	---
			Medusahead (TACA8)	---
			Wild oat (AVFA)	---
			Yellow starthistle (CESO3)	---
			Butter-n-eggs (TRERE2)	---
			Vetch (VICIA)	---
			Red brome (BRRU2)	---
			Brodiaea (BRODI)	---
			Bluedicks (DICAC5)	---
			Goldfields (LASTH)	---
			Fremont's tidytips (LAFR2)	---
Hamslough-------	---	---	Ryegrass (LOLIU)	---
			Brodiaea (BRODI)	---
			Medusahead (TACA8)	---
			Coyote thistle (ERCA33)	---
			Spikerush (ELEOC)	---
			Filaree (ERODI)	---
			Navarretia (NAVAR)	---
			Clover (TRIFO)	---
			Mouse barley (HOMAG)	---
			Goldfields (LASTH)	---
			Fremont's tidytips (LAFR2)	---
			Meadowfoam (LIMNA)	---
			Soft blow wives (ACMO2)	---
			Fremont's deathcamas (ZIFR)	---
302:				
Redtough--------	---	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Medusahead (TACA8)	---
			Wild oat (AVFA)	---
			Popcornflower (PLAGI)	---
			Shootingstar (DODEC)	---
			Brodiaea (BRODI)	---
			Red brome (BRRU2)	---
			Ripgut brome (BRDI3)	---
			Mouse barley (HOMAG)	---
			Butter-n-eggs (TRERE2)	---
			Bluedicks (DICAC5)	---
			Fremont's tidytips (LAFR2)	---
			Goldfields (LASTH)	---
			Yellow carpet (BLNAN)	---
			Soap plant (CHLOR3)	---
			Yellow starthistle (CESO3)	---
			Mediterranean barley (HOMUL)	---
			Vetch (VICIA)	---
			Hairypink (PEDU2)	---
			Dandelion (TARAX)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
302:				
Redswale	---	---	Ryegrass (LOLIU)	---
			Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Goldfields (LASTH)	---
			Medusahead (TACA8)	---
			Navarretia (NAVAR)	---
			Mediterranean barley (HOMUL)	---
			Fremont's tidytips (LAFR2)	---
			Brodiaea (BRODI)	---
			Pepperweed (LEPID)	---
			Wooly marbles (PSILO)	---
			Cowbag clover (TRDE)	---
			Soap plant (CHLOR3)	---
			Mouse barley (HOMAG)	---
303:				
Munjar	---	---	Soft chess (BRHOH)	---
			Wild oat (AVFA)	---
			Filaree (ERODI)	---
			Red brome (BRRU2)	---
			Clover (TRIFO)	---
			Yellow starthistle (CESO3)	---
			Buttercup (RANUN)	---
Tuscan taxadjunct	---	---	Medusahead (TACA8)	---
			Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Red clover (TRPR2)	---
			Italian ryegrass (LOPEM2)	---
			Brodiaea (BRODI)	---
			Goldfields (LASTH)	---
Galt	---	---	Italian ryegrass (LOPEM2)	---
			Medusahead (TACA8)	---
			Soft chess (BRHOH)	---
			Mouse barley (HOMAG)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Coyote thistle (ERCA33)	---
			Soft blow wives (ACMO2)	---
			Clover (TRIFO)	---
			Filaree (ERODI)	---
			Navarretia (NAVAR)	---
			Brodiaea (BRODI)	---
			Spikerush (ELEOC)	---
			Hairgrass (DESCH)	---
			Wild onion (ALLIU)	---
			Hayfield tarweed (HECOL3)	---
			White meadowfoam (LIALA)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
304:				
Redtough--------	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Medusahead (TACA8)	---
			Wild oat (AVFA)	---
			Popcornflower (PLAGI)	---
			Shootingstar (DODEC)	---
			Brodiaea (BRODI)	---
			Red brome (BRRU2)	---
			Ripgut brome (BRDI3)	---
			Mouse barley (HOMAG)	---
			Butter-n-eggs (TRERE2)	---
			Bluedicks (DICAC5)	---
			Fremont's tidytips (LAFR2)	---
			Goldfields (LASTH)	---
			Yellow carpet (BLNAN)	---
			Soap plant (CHLOR3)	---
			Yellow starthistle (CESO3)	---
			Mediterranean barley (HOMUL)	---
			Vetch (VICIA)	---
			Hairypink (PEDU2)	---
			Dandelion (TARAX)	---
			Blue oak (QUDO)	---
305:				
Redtough--------	---	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Medusahead (TACA8)	---
			Wild oat (AVFA)	---
			Popcornflower (PLAGI)	---
			Shootingstar (DODEC)	---
			Brodiaea (BRODI)	---
			Red brome (BRRU2)	---
			Ripgut brome (BRDI3)	---
			Mouse barley (HOMAG)	---
			Butter-n-eggs (TRERE2)	---
			Bluedicks (DICAC5)	---
			Fremont's tidytips (LAFR2)	---
			Goldfields (LASTH)	---
			Yellow carpet (BLNAN)	---
			Soap plant (CHLOR3)	---
			Yellow starthistle (CESO3)	---
			Mediterranean barley (HOMUL)	---
			Vetch (VICIA)	---
			Hairypink (PEDU2)	---
			Dandelion (TARAX)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
305:				
Redswale	---	---	Ryegrass (LOLIU)	---
			Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Goldfields (LASTH)	---
			Medusahead (TACA8)	---
			Navarretia (NAVAR)	---
			Mediterranean barley (HOMUL)	---
			Fremont's tidytips (LAFR2)	---
			Brodiaea (BRODI)	---
			Pepperweed (LEPID)	---
			Wooly marbles (PSILO)	---
			Cowbag clover (TRDE)	---
			Soap plant (CHLOR3)	---
			Mouse barley (HOMAG)	---
Anita	---	---	Italian ryegrass (LOPEM2)	---
			Medusahead (TACA8)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Navarretia (NAVAR)	---
			Coyote thistle (ERCA33)	---
			Goldfields (LASTH)	---
			White meadowfoam (LIALA)	---
			Fremont's tidytips (LAFR2)	---
306:				
Duric Xerarents, fill	---	---	Soft chess (BRHOH)	---
			Ripgut brome (BRDI3)	---
			Wild oat (AVFA)	---
			Filaree (ERODI)	---
			Mouse barley (HOMAG)	---
			Wild onion (ALLIU)	---
Duric Xerarents, cut	---	---	Soft chess (BRHOH)	---
			Ripgut brome (BRDI3)	---
			Wild oat (AVFA)	---
			Filaree (ERODI)	---
			Mouse barley (HOMAG)	---
			Wild onion (ALLIU)	---
307.				
Duric Xerarents				
310:				
Kimball	---	---	Soft chess (BRHOH)	---
			Wild oat (AVFA)	---
			Filaree (ERODI)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Foxtail fescue (FEME)	---
			Burclover (MEHI)	---
			Clover (TRIFO)	---
			Mouse barley (HOMAG)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
317:				
Thompsonflat----	Blue oak (QUDO)	---	Medusahead (TACA8)	---
	Interior live oak (QUWI2)	---	Soft chess (BRHOH)	---
	Foothill pine (PISA2)	---	Wild oat (AVFA)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Clover (TRIFO)	---
			Ripgut brome (BRDI3)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
			Redbud (CERCI2)	---
318:				
Thompsonflat----	---	---	Italian ryegrass (LOPEM2)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Red brome (BRRU2)	---
			Ripgut brome (BRDI3)	---
			Filaree (ERODI)	---
			Clover (TRIFO)	---
			Annual lupine (LUBI)	---
			Bluedicks (DICAC5)	---
			Fiddleneck (AMSIN)	---
Oroville--------	---	---	Soft chess (BRHOH)	---
			Wild oat (AVFA)	---
			Medusahead (TACA8)	---
			Mediterranean barley (HOMUL)	---
			Filaree (ERODI)	---
			Red brome (BRRU2)	---
			Italian ryegrass (LOPEM2)	---
			Pepperweed (LEPID)	---
			Vinegarweed (TRLA4)	---
			Goldfields (LASTH)	---
			Butter-n-eggs (TRERE2)	---
			Bluedicks (DICAC5)	---
			White brodiaea (TRHY3)	---
			Cowbag clover (TRDE)	---
			Fremont's tidytips (LAFR2)	---
			Soft blow wives (ACMO2)	---
			Popcornflower (PLAGI)	---
			Yellow starthistle (CESO3)	---
			Coyote thistle (ERCA33)	---
320:				
Vistarobles-----	---	---	Filaree (ERODI)	---
			Goldfields (LASTH)	---
			Hairgrass (DESCH)	---
			Soft blow wives (ACMO2)	---
			Soft chess (BRHOH)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
320:				
Redding---------	---	---	Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Ripgut brome (BRDI3)	---
			Wild oat (AVFA)	---
			Rose clover (TRHI4)	---
			White brodiaea (TRHY3)	---
			Wild onion (ALLIU)	---
			Bluedicks (DICAC5)	---
			Dandelion (TARAX)	---
			Medusahead (TACA8)	---
			Coyote thistle (ERCA33)	---
321:				
Durixeralfs, fine-loamy-----	---	---	Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Mediterranean barley (HOMUL)	---
			Medusahead (TACA8)	---
			Filaree (ERODI)	---
			Wild oat (AVFA)	---
			Rose clover (TRHI4)	---
			Ripgut brome (BRDI3)	---
			Bluedicks (DICAC5)	---
Durixeralfs, loamy-skeletal	---	---	Italian ryegrass (LOPEM2)	---
			Filaree (ERODI)	---
			Pepperweed (LEPID)	---
			Vinegarweed (TRLA4)	---
			Mediterranean barley (HOMUL)	---
			Soft chess (BRHOH)	---
			Soft blow wives (ACMO2)	---
			Medusahead (TACA8)	---
			Goldfields (LASTH)	---
			Cowbag clover (TRDE)	---
			Hairgrass (DESCH)	---
			Bluedicks (DICAC5)	---
			Navarretia (NAVAR)	---
			Mariposa lily (CALOC)	---
			Yellow carpet (BLNAN)	---
			Fremont's tidytips (LAFR2)	---
Typic Petraquepts----	---	---	Italian ryegrass (LOPEM2)	---
			Mediterranean barley (HOMUL)	---
			Vinegarweed (TRLA4)	---
			Cowbag clover (TRDE)	---
			Fremont's tidytips (LAFR2)	---
			Navarretia (NAVAR)	---
			Goldfields (LASTH)	---
			Dandelion (TARAX)	---
			Bluestars (BRMI3)	---
			Coyote thistle (ERCA33)	---
			Wooly marbles (PSILO)	---
			Calicoflower (DOWNI)	---
			Yellow carpet (BLNAN)	---
			Popcornflower (PLAGI)	---
			Hairgrass (DESCH)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
330:				
Wilsoncreek-----	Valley oak (QULO)	---	Wild oat (AVFA)	---
			Italian ryegrass (LOPEM2)	---
			Curly dock (RUCR)	---
			Willow (SALIX)	---
			California wild grape (VICA5)	---
			Pacific poison oak (TODI)	---
			Valley oak (QULO)	---
			Johnsongrass (SOHA)	---
Trainer---------	---	---	Italian ryegrass (LOPEM2)	---
			Wild oat (AVFA)	---
			Johnsongrass (SOHA)	---
			Valley oak (QULO)	---
			Pacific poison oak (TODI)	---
			Willow (SALIX)	---
			Curly dock (RUCR)	---
			California wild grape (VICA5)	---
331:				
Thompsonflat----	Blue oak (QUDO)	---	Medusahead (TACA8)	---
	Interior live oak (QUWI2)	---	Soft chess (BRHOH)	---
	Foothill pine (PISA2)	---	Wild oat (AVFA)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Clover (TRIFO)	---
			Ripgut brome (BRDI3)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
			Redbud (CERCI2)	---
335. Galt				
336:				
Galt------------	---	---	Italian ryegrass (LOPEM2)	---
			Medusahead (TACA8)	---
			Soft chess (BRHOH)	---
			Mouse barley (HOMAG)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Coyote thistle (ERCA33)	---
			Soft blow wives (ACMO2)	---
			Clover (TRIFO)	---
			Filaree (ERODI)	---
			Navarretia (NAVAR)	---
			Brodiaea (BRODI)	---
			Spikerush (ELEOC)	---
			Hairgrass (DESCH)	---
			Wild onion (ALLIU)	---
			Hayfield tarweed (HECOL3)	---
			White meadowfoam (LIALA)	---
337. Galt				
338: Oxyaquic Xerofluvents---	---	---	Mouse barley (HOMAG)	---
			Willow (SALIX)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
339:				
Oxyaquic Xerofluvents---	---	---	Willow (SALIX)	---
			Valley oak (QULO)	---
340:				
Rock outcrop.				
Thermalrocks----	---	---	Silver hairgrass (AICA)	---
			Sierra mock stonecrop (SEPU4)	---
			Hansen's spikemoss (SEHA2)	---
			Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Red brome (BRRU2)	---
			Medusahead (TACA8)	---
			Fiddleneck (AMSIN)	---
			Lupine (LUPIN)	---
			Mullein (VERBA)	---
			Buckwheat (ERIOG)	---
			Nitgrass (GAVE3)	---
			Vinegarweed (TRLA4)	---
			Brodiaea (BRODI)	---
			Mariposa lily (CALOC)	---
Campbellhills---	---	---	Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Red brome (BRRU2)	---
			Wild oat (AVFA)	---
			Italian ryegrass (LOPEM2)	---
			Medusahead (TACA8)	---
			Mouse barley (HOMAG)	---
			Fiddleneck (AMSIN)	---
			Mariposa lily (CALOC)	---
			Bluedicks (DICAC5)	---
			Monkeyflower (MIMUL)	---
			Lupine (LUPIN)	---
			Vetch (VICIA)	---
			Rose clover (TRHI4)	---
341:				
Elsey----------	---	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Hedgehog dogtail (CYEC)	---
			Ripgut brome (BRDI3)	---
			Wild oat (AVFA)	---
			Clover (TRIFO)	---
Beatsonhollow---	---	---	Soft chess (BRHOH)	---
			Medusahead (TACA8)	---
			Filaree (ERODI)	---
			Rattlesnake brome (BRBR5)	---
			Brodiaea (BRODI)	---
			Lupine (LUPIN)	---
			Vinegarweed (TRLA4)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
341:				
Campbellhills---	---	---	Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Red brome (BRRU2)	---
			Wild oat (AVFA)	---
			Italian ryegrass (LOPEM2)	---
			Medusahead (TACA8)	---
			Mouse barley (HOMAG)	---
			Fiddleneck (AMSIN)	---
			Mariposa lily (CALOC)	---
			Bluedicks (DICAC5)	---
			Monkeyflower (MIMUL)	---
			Lupine (LUPIN)	---
			Vetch (VICIA)	---
			Rose clover (TRHI4)	---
Rock outcrop.				
342:				
Thermalrocks----	---	---	Silver hairgrass (AICA)	---
			Sierra mock stonecrop (SEPU4)	---
			Hansen's spikemoss (SEHA2)	---
			Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Red brome (BRRU2)	---
			Medusahead (TACA8)	---
			Fiddleneck (AMSIN)	---
			Lupine (LUPIN)	---
			Mullein (VERBA)	---
			Buckwheat (ERIOG)	---
			Nitgrass (GAVE3)	---
			Vinegarweed (TRLA4)	---
			Brodiaea (BRODI)	---
			Mariposa lily (CALOC)	---
Beatsonhollow taxadjunct-----	---	---	Soft chess (BRHOH)	---
			Wild oat (AVFA)	---
			Ripgut brome (BRDI3)	---
			Medusahead (TACA8)	---
			Bluedicks (DICAC5)	---
			Filaree (ERODI)	---
			Red brome (BRRU2)	---
			Clover (TRIFO)	---
			Buckwheat (ERIOG)	---
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
343:				
Coalcanyon------	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Valley oak (QULO)	---
	Valley oak (QULO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Toyon (HEAR5)	---
			California laurel (UMCA)	---
			Mustard (BRASS2)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Yellow starthistle (CESO3)	---
			Rose clover (TRHI4)	---
Coonhollow------	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Valley oak (QULO)	---
	Valley oak (QULO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Toyon (HEAR5)	---
			Mustard (BRASS2)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Yellow starthistle (CESO3)	---
			Rose clover (TRHI4)	---
344:				
Coalcanyon------	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Valley oak (QULO)	---
	Valley oak (QULO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Toyon (HEAR5)	---
			California laurel (UMCA)	---
			Mustard (BRASS2)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Yellow starthistle (CESO3)	---
			Rose clover (TRHI4)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
344:				
Coonhollow------	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Valley oak (QULO)	---
	Valley oak (QULO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Toyon (HEAR5)	---
			Mustard (BRASS2)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Yellow starthistle (CESO3)	---
			Rose clover (TRHI4)	---
Rock outcrop.				
346:				
Cherotable------	---	---	Wheatgrass (AGROP2)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Clover (TRIFO)	---
			Filaree (ERODI)	---
			Fiddleneck (AMSIN)	---
			Medusahead (TACA8)	---
			Ripgut brome (BRDI3)	---
			Lupine (LUPIN)	---
Elsey.				
347:				
Haplic Palexeralfs----	---	---	Wild oat (AVFA)	---
			Ripgut brome (BRDI3)	---
			Soft chess (BRHOH)	---
			Larkspur (DELPH)	---
			Pacific poison oak (TODI)	---
			Yellow starthistle (CESO3)	---
			Hedgehog dogtail (CYEC)	---
			California wild grape (VICA5)	---
			Cottonwood (POPUL)	---
			Valley oak (QULO)	---
			Willow (SALIX)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
353:				
Cherokeespring--	---	---	Interior live oak (QUWI2)	---
			California black oak (QUKE)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Yellow starthistle (CESO3)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Ripgut brome (BRDI3)	---
			Filaree (ERODI)	---
			Cowbag clover (TRDE)	---
			Valley oak (QULO)	---
			Foothill pine (PISA2)	---
			Blue oak (QUDO)	---
355:				
Coalcanyon------	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Valley oak (QULO)	---
	Valley oak (QULO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Toyon (HEAR5)	---
			California laurel (UMCA)	---
			Mustard (BRASS2)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Yellow starthistle (CESO3)	---
			Rose clover (TRHI4)	---
Talus.				
356:				
Coalcanyon------	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Valley oak (QULO)	---
	Valley oak (QULO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Toyon (HEAR5)	---
			California laurel (UMCA)	---
			Mustard (BRASS2)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Yellow starthistle (CESO3)	---
			Rose clover (TRHI4)	---
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
356:				
Talus.				
Coonhollow------	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Valley oak (QULO)	---
	Valley oak (QULO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Toyon (HEAR5)	---
			Mustard (BRASS2)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Yellow starthistle (CESO3)	---
			Rose clover (TRHI4)	---
360:				
Typic Xerofluvents, coarse-loamy---	Cottonwood (POPUL)	---	Filaree (ERODI)	---
	Valley oak (QULO)	---	Red brome (BRRU2)	---
	California sycamore (PLRA)	---	Willow (SALIX)	---
	Black walnut (JUNI)	---	California wild grape (VICA5)	---
			Pacific poison oak (TODI)	---
Typic Xerofluvents, loamy-skeletal	Cottonwood (POPUL)	---	Filaree (ERODI)	---
	Valley oak (QULO)	---	Red brome (BRRU2)	---
	California sycamore (PLRA)	---	Willow (SALIX)	---
	Black walnut (JUNI)	---	California wild grape (VICA5)	---
			Pacific poison oak (TODI)	---
361:				
Typic Xerofluvents---	Cottonwood (POPUL)	---	Filaree (ERODI)	---
	Valley oak (QULO)	---	Red brome (BRRU2)	---
	California sycamore (PLRA)	---	Willow (SALIX)	---
	Black walnut (JUNI)	---	California wild grape (VICA5)	---
			Pacific poison oak (TODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
362: Ultic Haploxeralfs, sandstone, low elevation, very deep	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Valley oak (QULO)	---	Ryegrass (LOLIU)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Foothill pine (PISA2)	---	Clover (TRIFO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Wild oat (AVFA)	---
			Mustard (BRASS2)	---
			Blue oak (QUDO)	---
			Brodiaea (BRODI)	---
			Dandelion (TARAX)	---
			Medusahead (TACA8)	---
			Filaree (ERODI)	---
			Popcornflower (PLAGI)	---
			Valley oak (QULO)	---
			Bottlebrush squirreltail (ELEL5)	
			Interior live oak (QUWI2)	---
			Lupine (LUPIN)	---
			Foothill pine (PISA2)	---
			Mediterranean barley (HOMUL)	---
Ultic Haploxeralfs, sandstone, low elevation, deep	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Valley oak (QULO)	---	Ryegrass (LOLIU)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Foothill pine (PISA2)	---	Clover (TRIFO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Wild oat (AVFA)	---
			Mustard (BRASS2)	---
			Blue oak (QUDO)	---
			Brodiaea (BRODI)	---
			Dandelion (TARAX)	---
			Medusahead (TACA8)	---
			Filaree (ERODI)	---
			Popcornflower (PLAGI)	---
			Valley oak (QULO)	---
			Bottlebrush squirreltail (ELEL5)	
			Interior live oak (QUWI2)	---
			Lupine (LUPIN)	---
			Foothill pine (PISA2)	---
			Mediterranean barley (HOMUL)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
363:				
Ultic Haploxeralfs, sandstone, low elevation, very deep	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Valley oak (QULO)	---	Ryegrass (LOLIU)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Foothill pine (PISA2)	---	Clover (TRIFO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Wild oat (AVFA)	---
			Mustard (BRASS2)	---
			Blue oak (QUDO)	---
			Brodiaea (BRODI)	---
			Dandelion (TARAX)	---
			Medusahead (TACA8)	---
			Filaree (ERODI)	---
			Popcornflower (PLAGI)	---
			Valley oak (QULO)	---
			Bottlebrush squirreltail (ELEL5)	
			Interior live oak (QUWI2)	---
			Lupine (LUPIN)	---
			Foothill pine (PISA2)	---
			Mediterranean barley (HOMUL)	---
Ultic Haploxeralfs, sandstone, low elevation, deep	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Valley oak (QULO)	---	Ryegrass (LOLIU)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Foothill pine (PISA2)	---	Clover (TRIFO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Wild oat (AVFA)	---
			Mustard (BRASS2)	---
			Blue oak (QUDO)	---
			Brodiaea (BRODI)	---
			Dandelion (TARAX)	---
			Medusahead (TACA8)	---
			Filaree (ERODI)	---
			Popcornflower (PLAGI)	---
			Valley oak (QULO)	---
			Bottlebrush squirreltail (ELEL5)	
			Interior live oak (QUWI2)	---
			Lupine (LUPIN)	---
			Foothill pine (PISA2)	---
			Mediterranean barley (HOMUL)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
364: Ultic Haploxeralfs, sandstone, low elevation, deep	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Valley oak (QULO)	---	Ryegrass (LOLIU)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Foothill pine (PISA2)	---	Clover (TRIFO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Wild oat (AVFA)	---
			Mustard (BRASS2)	---
			Blue oak (QUDO)	---
			Brodiaea (BRODI)	---
			Dandelion (TARAX)	---
			Medusahead (TACA8)	---
			Filaree (ERODI)	---
			Popcornflower (PLAGI)	---
			Valley oak (QULO)	---
			Bottlebrush squirreltail (ELEL5)	
			Interior live oak (QUWI2)	---
			Lupine (LUPIN)	---
			Foothill pine (PISA2)	---
			Mediterranean barley (HOMUL)	---
Ultic Haploxeralfs, sandstone, low elevation, very deep	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Valley oak (QULO)	---	Ryegrass (LOLIU)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Foothill pine (PISA2)	---	Clover (TRIFO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Wild oat (AVFA)	---
			Mustard (BRASS2)	---
			Blue oak (QUDO)	---
			Brodiaea (BRODI)	---
			Dandelion (TARAX)	---
			Medusahead (TACA8)	---
			Filaree (ERODI)	---
			Popcornflower (PLAGI)	---
			Valley oak (QULO)	---
			Bottlebrush squirreltail (ELEL5)	
			Interior live oak (QUWI2)	---
			Lupine (LUPIN)	---
			Foothill pine (PISA2)	---
			Mediterranean barley (HOMUL)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
365:				
Palexerults-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Valley oak (QULO)	---	Medusahead (TACA8)	---
	Foothill pine (PISA2)	---	Hedgehog dogtail (CYEC)	---
			Soft chess (BRHOH)	---
			Pacific poison oak (TODI)	---
			Ryegrass (LOLIU)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
			Filaree (ERODI)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
			Manzanita (ARCTO3)	---
			Toyon (HEAR5)	---
			Buckbrush (CECU)	---
			Valley oak (QULO)	---
			Foothill pine (PISA2)	---
366:				
Palexerults-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Valley oak (QULO)	---	Medusahead (TACA8)	---
	Foothill pine (PISA2)	---	Hedgehog dogtail (CYEC)	---
			Soft chess (BRHOH)	---
			Pacific poison oak (TODI)	---
			Ryegrass (LOLIU)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
			Filaree (ERODI)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
			Manzanita (ARCTO3)	---
			Toyon (HEAR5)	---
			Buckbrush (CECU)	---
			Valley oak (QULO)	---
			Foothill pine (PISA2)	---
370:				
Palexerults-----	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Valley oak (QULO)	---	Medusahead (TACA8)	---
	Foothill pine (PISA2)	---	Hedgehog dogtail (CYEC)	---
			Soft chess (BRHOH)	---
			Pacific poison oak (TODI)	---
			Ryegrass (LOLIU)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
			Filaree (ERODI)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
			Manzanita (ARCTO3)	---
			Toyon (HEAR5)	---
			Buckbrush (CECU)	---
			Valley oak (QULO)	---
			Foothill pine (PISA2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
375:				
Wickscorner-----	---	---	Mediterranean barley (HOMUL)	---
			Bluedicks (DICAC5)	---
			Cowbag clover (TRDE)	---
			Fiddleneck (AMSIN)	---
			Filaree (ERODI)	---
			Lupine (LUPIN)	---
			Ripgut brome (BRDI3)	---
			Rose clover (TRHI4)	---
			Ryegrass (LOLIU)	---
			Soft chess (BRHOH)	---
			Wild oat (AVFA)	---
			Yellow starthistle (CESO3)	---
376:				
Flagcanyon------	---	---	Himalaya blackberry (RUDI2)	---
			Brodiaea (BRODI)	---
			Brome (BROMU)	---
			Cowbag clover (TRDE)	---
			Fiddleneck (AMSIN)	---
			Filaree (ERODI)	---
			Lupine (LUPIN)	---
			Ripgut brome (BRDI3)	---
			Ryegrass (LOLIU)	---
			Soft chess (BRHOH)	---
			Wild oat (AVFA)	---
			Yellow starthistle (CESO3)	---
			Hedgehog dogtail (CYEC)	---
Wickscorner-----	---	---	Mediterranean barley (HOMUL)	---
			Bluedicks (DICAC5)	---
			Cowbag clover (TRDE)	---
			Fiddleneck (AMSIN)	---
			Filaree (ERODI)	---
			Lupine (LUPIN)	---
			Ripgut brome (BRDI3)	---
			Rose clover (TRHI4)	---
			Ryegrass (LOLIU)	---
			Soft chess (BRHOH)	---
			Wild oat (AVFA)	---
			Yellow starthistle (CESO3)	---
377:				
Flagcanyon taxadjunct-----	---	---	Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Italian ryegrass (LOPEM2)	---
			Medusahead (TACA8)	---
			Rose clover (TRHI4)	---
			Vinegarweed (TRLA4)	---
			Dandelion (TARAX)	---
			Mariposa lily (CALOC)	---
			Ripgut brome (BRDI3)	---
			Bluedicks (DICAC5)	---
			Mediterranean barley (HOMUL)	---
			Filaree (ERODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
377:				
Durixeralfs-----	---	---	Italian ryegrass (LOPEM2)	---
			Soft chess (BRHOH)	---
			Clover (TRIFO)	---
			Mediterranean barley (HOMUL)	---
			Vinegarweed (TRLA4)	---
			Bluedicks (DICAC5)	---
			Medusahead (TACA8)	---
			Brodiaea (BRODI)	---
			Wild oat (AVFA)	---
			Ripgut brome (BRDI3)	---
			Fiddleneck (AMSIN)	---
			Filaree (ERODI)	---
Duraquerts------	---	---	Popcornflower (PLAGI)	---
			Cowbag clover (TRDE)	---
			Medusahead (TACA8)	---
			Italian ryegrass (LOPEM2)	---
			Soft blow wives (ACMO2)	---
			Lupine (LUPIN)	---
			Pepperweed (LEPID)	---
			Meadowfoam (LIMNA)	---
			Mediterranean barley (HOMUL)	---
			Coyote thistle (ERCA33)	---
			Soft chess (BRHOH)	---
			Yellow carpet (BLNAN)	---
			Navarretia (NAVAR)	---
			Soft blow wives (ACMO2)	---
			Butter-n-eggs (TRERE2)	---
			Wooly marbles (PSILO)	---
400. Subaco taxadjunct				
415:				
Ignord----------	Valley oak (QULO)	---	---	---
416:				
Calcic Haploxerolls---	---	---	Orchardgrass (DAGL)	---
			Curly dock (RUCR)	---
			Mouse barley (HOMAG)	---
			Italian ryegrass (LOPEM2)	---
			Saltgrass (DISTI)	---
			Alameda County thistle (CIQU2)	---
418:				
Almendra--------	---	---	Valley oak (QULO)	---
419:				
Conejo----------	---	---	Oak (QUERC)	---
420:				
Conejo----------	---	---	Oak (QUERC)	---
425, 426. Vina				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
439. Oxyaquic Xerofluvents				
440: Oxyaquic Xerofluvents---	---	---	Willow (SALIX)	---
			Valley oak (QULO)	---
441. Oxyaquic Xerofluvents				
442, 443. Durixerolls.				
Haploxerolls.				
445. Chico				
447: Charger---	---	---	Valley oak (QULO)	---
448, 449. Haploxerolls				
500: Lofgren---	---	---	Carex (CAREX)	---
Blavo---	---	---	Spikerush (ELEOC)	---
			Swampgrass (CRSC)	---
501: Lofgren---	---	---	Carex (CAREX)	---
Blavo---	---	---	Spikerush (ELEOC)	---
			Swampgrass (CRSC)	---
502: Blavo---	---	---	Spikerush (ELEOC)	---
			Swampgrass (CRSC)	---
519. Edjobe				
520: Esquon---	---	---	Italian ryegrass (LOPEM2)	---
			Curly dock (RUCR)	---
			Spikerush (ELEOC)	---
Neerdobe---	---	---	Italian ryegrass (LOPEM2)	---
			Curly dock (RUCR)	---
			Spikerush (ELEOC)	---
521: Neerdobe---	---	---	Italian ryegrass (LOPEM2)	---
			Curly dock (RUCR)	---
			Spikerush (ELEOC)	---
522. Clear Lake				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
523:				
Esquon----------	---	---	Spikerush (ELEOC)	---
			Bermudagrass (CYDA)	---
			Cocklebur (XANTH2)	---
			Italian ryegrass (LOPEM2)	---
			Curly dock (RUCR)	---
			Bulrush (SCIRP)	---
			Cattail (TYPHA)	---
			Willow (SALIX)	---
			Cottonwood (POPUL)	---
525, 526.				
Govstanford				
528:				
Neerdobe--------	---	---	Italian ryegrass (LOPEM2)	---
			Curly dock (RUCR)	---
			Spikerush (ELEOC)	---
550:				
Dunstone--------	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
			Rattlesnake brome (BRBR5)	---
			Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Medusahead (TACA8)	---
			Junegrass (KOMA)	---
Loafercreek-----	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Foothill pine (PISA2)	---	Rattlesnake brome (BRBR5)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Medusahead (TACA8)	---
			Junegrass (KOMA)	---
551:				
Dunstone--------	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
			Rattlesnake brome (BRBR5)	---
			Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Medusahead (TACA8)	---
			Junegrass (KOMA)	---
Lomarica--------	Blue oak (QUDO)	---	Wild oat (AVFA)	---
	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Buckbrush (CECU)	---
			Medusahead (TACA8)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
551:				
Argonaut taxadjunct	Blue oak (QUDO)	---	Wild oat (AVFA)	---
	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Medusahead (TACA8)	---
552:				
Dunstone	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Wild oat (AVFA)	---
			Pacific poison oak (TODI)	---
			Soft chess (BRHOH)	---
			Rattlesnake brome (BRBR5)	---
			Squirreltail (ELELC2)	---
Loafercreek	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Wild oat (AVFA)	---
			Pacific poison oak (TODI)	---
			Soft chess (BRHOH)	---
			Rattlesnake brome (BRBR5)	---
			Squirreltail (ELELC2)	---
553:				
Dunstone	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Wild oat (AVFA)	---
			Pacific poison oak (TODI)	---
			Soft chess (BRHOH)	---
			Rattlesnake brome (BRBR5)	---
			Squirreltail (ELELC2)	---
Loafercreek	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Wild oat (AVFA)	---
			Pacific poison oak (TODI)	---
			Soft chess (BRHOH)	---
			Rattlesnake brome (BRBR5)	---
			Squirreltail (ELELC2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
554:				
Dunstone--------	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Wild oat (AVFA)	---
			Pacific poison oak (TODI)	---
			Soft chess (BRHOH)	---
			Rattlesnake brome (BRBR5)	---
			Squirreltail (ELELC2)	---
Loafercreek-----	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Wild oat (AVFA)	---
			Pacific poison oak (TODI)	---
			Soft chess (BRHOH)	---
			Rattlesnake brome (BRBR5)	---
			Squirreltail (ELELC2)	---
555:				
Dunstone--------	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Wild oat (AVFA)	---
			Pacific poison oak (TODI)	---
			Soft chess (BRHOH)	---
			Rattlesnake brome (BRBR5)	---
			Squirreltail (ELELC2)	---
Loafercreek-----	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Wild oat (AVFA)	---
			Pacific poison oak (TODI)	---
			Soft chess (BRHOH)	---
			Rattlesnake brome (BRBR5)	---
			Squirreltail (ELELC2)	---
556:				
Mounthope-------	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
	Ponderosa pine (PIPO)	---	Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Chapparal coffeeberry (FRCA12)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Ponderosa pine (PIPO)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
556:				
Hartsmill-------	Interior live oak (QUWI2)	---	Whiteleaf manzanita (ARMA)	---
	Blue oak (QUDO)	---		
	California black oak (QUKE)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
	Incense cedar (CADE27)	---	Interior live oak (QUWI2)	---
	Pacific madrone (ARME)	---	Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Pacific madrone (ARME)	---
			California black oak (QUKE)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
557:				
Mounthope-------	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
	Ponderosa pine (PIPO)	---	Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Chapparal coffeeberry (FRCA12)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Ponderosa pine (PIPO)	---
Hartsmill-------	Interior live oak (QUWI2)	---	Whiteleaf manzanita (ARMA)	---
	Blue oak (QUDO)	---		
	California black oak (QUKE)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
	Incense cedar (CADE27)	---	Interior live oak (QUWI2)	---
	Pacific madrone (ARME)	---	Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Pacific madrone (ARME)	---
			California black oak (QUKE)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
558:				
Hartsmill-------	Interior live oak (QUWI2)	---	Whiteleaf manzanita (ARMA)	---
	Blue oak (QUDO)	---		
	California black oak (QUKE)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
	Incense cedar (CADE27)	---	Interior live oak (QUWI2)	---
	Pacific madrone (ARME)	---	Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Pacific madrone (ARME)	---
			California black oak (QUKE)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
558:				
Mounthope-------	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
	Ponderosa pine (PIPO)	---	Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Chapparal coffeeberry (FRCA12)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Ponderosa pine (PIPO)	---
559:				
Hartsmill-------	Interior live oak (QUWI2)	---	Whiteleaf manzanita (ARMA)	---
	Blue oak (QUDO)	---		
	California black oak (QUKE)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
	Incense cedar (CADE27)	---	Interior live oak (QUWI2)	---
	Pacific madrone (ARME)	---	Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Pacific madrone (ARME)	---
			California black oak (QUKE)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
Mounthope-------	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
	Ponderosa pine (PIPO)	---	Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Chapparal coffeeberry (FRCA12)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Ponderosa pine (PIPO)	---
560:				
Hartsmill-------	Interior live oak (QUWI2)	---	Whiteleaf manzanita (ARMA)	---
	Blue oak (QUDO)	---		
	California black oak (QUKE)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
	Incense cedar (CADE27)	---	Interior live oak (QUWI2)	---
	Pacific madrone (ARME)	---	Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Pacific madrone (ARME)	---
			California black oak (QUKE)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
560:				
Mounthope--------	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
	Ponderosa pine (PIPO)	---	Toyon (HEAR5)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Chapparal coffeeberry (FRCA12)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Ponderosa pine (PIPO)	---
561:				
Bigridge--------	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1
Minniecreek-----	California black oak (QUKE)	---	California black oak (QUKE)	---
	Interior live oak (QUWI2)	---	Pacific madrone (ARME)	---
	Pacific madrone (ARME)	---	Canyon live oak (QUCH2)	---
	Ponderosa pine (PIPO)	---	Deerbrush (CEIN3)	---
	Canyon live oak (QUCH2)	---	Interior live oak (QUWI2)	---
			Ponderosa pine (PIPO)	---
			Western brackenfern (PTAQ)	---
			Whiteleaf manzanita (ARMA)	---
			Pacific poison oak (TODI)	---
562:				
Bigridge--------	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
562:				
Minniecreek-----	California black oak (QUKE)	---	California black oak (QUKE)	---
	Interior live oak (QUWI2)	---	Pacific madrone (ARME)	---
	Pacific madrone (ARME)	---	Canyon live oak (QUCH2)	---
	Ponderosa pine (PIPO)	---	Deerbrush (CEIN3)	---
	Canyon live oak (QUCH2)	---	Interior live oak (QUWI2)	---
			Ponderosa pine (PIPO)	---
			Western brackenfern (PTAQ)	---
			Whiteleaf manzanita (ARMA)	---
			Pacific poison oak (TODI)	---
563:				
Bigridge--------	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1
Minniecreek-----	California black oak (QUKE)	---	California black oak (QUKE)	---
	Interior live oak (QUWI2)	---	Pacific madrone (ARME)	---
	Pacific madrone (ARME)	---	Canyon live oak (QUCH2)	---
	Ponderosa pine (PIPO)	---	Deerbrush (CEIN3)	---
	Canyon live oak (QUCH2)	---	Interior live oak (QUWI2)	---
			Ponderosa pine (PIPO)	---
			Western brackenfern (PTAQ)	---
			Whiteleaf manzanita (ARMA)	---
			Pacific poison oak (TODI)	---
564:				
Bigridge--------	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
564:				
Minniecreek-----	California black oak (QUKE)	---	California black oak (QUKE)	---
	Interior live oak (QUWI2)	---	Pacific madrone (ARME)	---
	Pacific madrone (ARME)	---	Canyon live oak (QUCH2)	---
	Ponderosa pine (PIPO)	---	Deerbrush (CEIN3)	---
	Canyon live oak (QUCH2)	---	Interior live oak (QUWI2)	---
			Ponderosa pine (PIPO)	---
			Western brackenfern (PTAQ)	---
			Whiteleaf manzanita (ARMA)	---
			Pacific poison oak (TODI)	---
565:				
Dunstone--------	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Rattlesnake brome (BRBR5)	---
			Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Medusahead (TACA8)	---
			Junegrass (KOMA)	---
Argonaut taxadjunct-----	Blue oak (QUDO)	---	Wild oat (AVFA)	---
	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Medusahead (TACA8)	---
Sunnyslope------	Blue oak (QUDO)	---	Rattlesnake brome (BRBR5)	---
	Foothill pine (PISA2)	---	Wild oat (AVFA)	---
	Interior live oak (QUWI2)	---	Soft chess (BRHOH)	---
			Clover (TRIFO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Italian ryegrass (LOPEM2)	---
			Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Medusahead (TACA8)	---
			Dandelion (TARAX)	---
			Wild onion (ALLIU)	---
			Whiteleaf manzanita (ARMA)	---
566:				
Dunstone--------	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Rattlesnake brome (BRBR5)	---
			Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Medusahead (TACA8)	---
			Junegrass (KOMA)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
566:				
Loafercreek-----	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Foothill pine (PISA2)	---	Rattlesnake brome (BRBR5)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Medusahead (TACA8)	---
			Junegrass (KOMA)	---
Katskillhill----	Blue oak (QUDO)	---	Rattlesnake brome (BRBR5)	---
	Foothill pine (PISA2)	---	Italian ryegrass (LOPEM2)	---
			Bermudagrass (CYDA)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Ripgut brome (BRDI3)	---
			Yellow salsify (TRDU)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Wild onion (ALLIU)	---
			Dandelion (TARAX)	---
			Columbine (AQUIL)	---
			Red clover (TRPR2)	---
			Thistle (CIRSI)	---
			Ragweed (AMBRO)	---
567:				
Dunstone--------	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Rattlesnake brome (BRBR5)	---
			Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Medusahead (TACA8)	---
			Junegrass (KOMA)	---
Loafercreek-----	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Foothill pine (PISA2)	---	Rattlesnake brome (BRBR5)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Medusahead (TACA8)	---
			Junegrass (KOMA)	---
Argonaut taxadjunct-----	Blue oak (QUDO)	---	Wild oat (AVFA)	---
	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Medusahead (TACA8)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
577:				
Parkshill-------	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Ponderosa pine (PIPO)	---	Wild oat (AVFA)	---
	Valley oak (QULO)	---	Hedgehog dogtail (CYEC)	---
	Blue oak (QUDO)	---	Rattlesnake brome (BRBR5)	---
			Pacific poison oak (TODI)	---
			Clover (TRIFO)	---
			Blue oak (QUDO)	---
			Valley oak (QULO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Ponderosa pine (PIPO)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
Flanly----------	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Blue oak (QUDO)	---	Wild oat (AVFA)	---
			Blue oak (QUDO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Wild onion (ALLIU)	---
			Rattlesnake brome (BRBR5)	---
			Mariposa lily (CALOC)	---
			Vinegarweed (TRLA4)	---
			Hayfield tarweed (HECOL3)	---
Hurleton--------	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Blue oak (QUDO)	---	Ripgut brome (BRDI3)	---
			Wild oat (AVFA)	---
			Hedgehog dogtail (CYEC)	---
			Rose clover (TRHI4)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Rattlesnake brome (BRBR5)	---
			Buckbrush (CECU)	---
			Whiteleaf manzanita (ARMA)	---
			Chapparal coffeeberry (FRCA12)	---
			Foothill pine (PISA2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
578:				
Flanly----------	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Blue oak (QUDO)	---	Ripgut brome (BRDI3)	---
			Wild oat (AVFA)	---
			Blue oak (QUDO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Wild onion (ALLIU)	---
			Rattlesnake brome (BRBR5)	---
			Mariposa lily (CALOC)	---
			Vinegarweed (TRLA4)	---
			Hayfield tarweed (HECOL3)	---
Swedesflat------	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Blue oak (QUDO)	---	Wild oat (AVFA)	---
			Red brome (BRRU2)	---
			Pacific poison oak (TODI)	---
			Medusahead (TACA8)	---
			Blue oak (QUDO)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
580:				
Surnuf taxadjunct-----	Ponderosa pine (PIPO)	42	Deerbrush (CEIN3)	15
	Douglas-fir (PSME)	32	California buckthorn (FRCAT2)	5
	California black oak (QUKE)	10	Bigleaf maple (ACMA3)	3
	Pacific madrone (ARME)	8	Pacific madrone (ARME)	3
	Sugar pine (PILA)	8	Pacific poison oak (TODI)	---
			Pacific dogwood (CONU4)	3
			California honeysuckle (LOHI2)	3
			Western brackenfern (PTAQ)	3
			California black oak (QUKE)	3
			Whiteleaf manzanita (ARMA)	3
			Himalaya blackberry (RUDI2)	3
			California needlegrass (ACOCC)	1
			Toyon (HEAR5)	1
			Iris (IRIS)	1
			Ryegrass (LOLIU)	1
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
580:				
Griffgulch------	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16		
	California black oak (QUKE)	12	Pacific madrone (ARME)	6
			Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
Rock outcrop.				
581:				
Surnuf taxadjunct-----	Ponderosa pine (PIPO)	42	Deerbrush (CEIN3)	15
	Douglas-fir (PSME)	32	California buckthorn (FRCAT2)	5
	California black oak (QUKE)	10	Bigleaf maple (ACMA3)	3
	Pacific madrone (ARME)	8	Pacific madrone (ARME)	3
	Sugar pine (PILA)	8	Pacific poison oak (TODI)	---
			Pacific dogwood (CONU4)	3
			California honeysuckle (LOHI2)	3
			Western brackenfern (PTAQ)	3
			California black oak (QUKE)	3
			Whiteleaf manzanita (ARMA)	3
			Himalaya blackberry (RUDI2)	3
			California needlegrass (ACOCC)	1
			Toyon (HEAR5)	1
			Iris (IRIS)	1
			Ryegrass (LOLIU)	1
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
581:				
Griffgulch------	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16		
	California black oak (QUKE)	12	Pacific madrone (ARME)	6
			Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
582:				
Surnuf taxadjunct-----	Ponderosa pine (PIPO)	42	Deerbrush (CEIN3)	15
	Douglas-fir (PSME)	32	California buckthorn (FRCAT2)	5
	California black oak (QUKE)	10	Bigleaf maple (ACMA3)	3
	Pacific madrone (ARME)	8	Pacific madrone (ARME)	3
	Sugar pine (PILA)	8	Pacific poison oak (TODI)	---
			Pacific dogwood (CONU4)	3
			California honeysuckle (LOHI2)	3
			Western brackenfern (PTAQ)	3
			California black oak (QUKE)	3
			Whiteleaf manzanita (ARMA)	3
			Himalaya blackberry (RUDI2)	3
			California needlegrass (ACOCC)	1
			Toyon (HEAR5)	1
			Iris (IRIS)	1
			Ryegrass (LOLIU)	1
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
582:				
Griffgulch------	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16		
	California black oak (QUKE)	12	Pacific madrone (ARME)	6
			Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
583:				
Surnuf taxadjunct-----	Ponderosa pine (PIPO)	42	Deerbrush (CEIN3)	15
	Douglas-fir (PSME)	32	California buckthorn (FRCAT2)	5
	California black oak (QUKE)	10	Bigleaf maple (ACMA3)	3
	Pacific madrone (ARME)	8	Pacific madrone (ARME)	3
	Sugar pine (PILA)	8	Pacific poison oak (TODI)	---
			Pacific dogwood (CONU4)	3
			California honeysuckle (LOHI2)	3
			Western brackenfern (PTAQ)	3
			California black oak (QUKE)	3
			Whiteleaf manzanita (ARMA)	3
			Himalaya blackberry (RUDI2)	3
			California needlegrass (ACOCC)	1
			Toyon (HEAR5)	1
			Iris (IRIS)	1
			Ryegrass (LOLIU)	1
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
583:				
Griffgulch------	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16		
	California black oak (QUKE)	12	Pacific madrone (ARME)	6
			Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
584:				
Flanly----------	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Blue oak (QUDO)	---	Wild oat (AVFA)	---
			Blue oak (QUDO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Wild onion (ALLIU)	---
			Rattlesnake brome (BRBR5)	---
			Mariposa lily (CALOC)	---
			Vinegarweed (TRLA4)	---
			Hayfield tarweed (HECOL3)	---
Swedesflat------	Blue oak (QUDO)	---	Ripgut brome (BRDI3)	---
	Foothill pine (PISA2)	---	Red brome (BRRU2)	---
	Interior live oak (QUWI2)	---	Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
Rackerby--------	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
			Whiteleaf manzanita (ARMA)	---
			Pacific poison oak (TODI)	---
			Toyon (HEAR5)	---
			Buckbrush (CECU)	---
			Wild oat (AVFA)	---
			Ripgut brome (BRDI3)	---
			Medusahead (TACA8)	---
			Rattlesnake brome (BRBR5)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
585:				
Flanly----------	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
	Interior live oak (QUWI2)	---	Foothill pine (PISA2)	---
	Blue oak (QUDO)	---	Interior live oak (QUWI2)	---
			Whiteleaf manzanita (ARMA)	---
			Soft chess (BRHOH)	---
			Ripgut brome (BRDI3)	---
			Wild oat (AVFA)	---
			Blue oak (QUDO)	---
			Pacific poison oak (TODI)	---
Sommeyflat------	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Wild oat (AVFA)	---
	Blue oak (QUDO)	---	Ripgut brome (BRDI3)	---
			Red clover (TRPR2)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Creeping sage (SASO)	---
			Ponderosa pine (PIPO)	---
586:				
Sommeyflat------	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Foothill pine (PISA2)	---	Wild oat (AVFA)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Ponderosa pine (PIPO)	---	Red clover (TRPR2)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Creeping sage (SASO)	---
			Ponderosa pine (PIPO)	---
Mounthope-------	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
	Interior live oak (QUWI2)	---	Foothill pine (PISA2)	---
	Ponderosa pine (PIPO)	---	Interior live oak (QUWI2)	---
			Ponderosa pine (PIPO)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
			Pacific poison oak (TODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
587:				
Sommeyflat------	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Foothill pine (PISA2)	---	Wild oat (AVFA)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
	Ponderosa pine (PIPO)	---	Red clover (TRPR2)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Foothill pine (PISA2)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Creeping sage (SASO)	---
			Ponderosa pine (PIPO)	---
Mounthope-------	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Buckbrush (CECU)	---
	Interior live oak (QUWI2)	---	Foothill pine (PISA2)	---
	Ponderosa pine (PIPO)	---	Interior live oak (QUWI2)	---
			Ponderosa pine (PIPO)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
			Pacific poison oak (TODI)	---
Hurleton--------	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Blue oak (QUDO)	---	Ripgut brome (BRDI3)	---
	Interior live oak (QUWI2)	---	Wild oat (AVFA)	---
			Hedgehog dogtail (CYEC)	---
			Rose clover (TRHI4)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Rattlesnake brome (BRBR5)	---
			Buckbrush (CECU)	---
			Whiteleaf manzanita (ARMA)	---
			Chapparal coffeeberry (FRCA12)	---
			Foothill pine (PISA2)	---
588:				
Ultic Haploxeralfs, thermic, high terrace--------	Blue oak (QUDO)	---	Ripgut brome (BRDI3)	---
	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
			Dandelion (TARAX)	---
			Hedgehog dogtail (CYEC)	---
			Wild onion (ALLIU)	---
			Pacific poison oak (TODI)	---
			Red clover (TRPR2)	---
			Wild oat (AVFA)	---
			Whiteleaf manzanita (ARMA)	---
			Junegrass (KOMA)	---
			Navarretia (NAVAR)	---
			Rattlesnake brome (BRBR5)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
589: Ultic Haploxeralfs, thermic, high terrace	Blue oak (QUDO)	---	Ripgut brome (BRDI3)	---
	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
			Dandelion (TARAX)	---
			Hedgehog dogtail (CYEC)	---
			Wild onion (ALLIU)	---
			Pacific poison oak (TODI)	---
			Red clover (TRPR2)	---
			Wild oat (AVFA)	---
			Whiteleaf manzanita (ARMA)	---
			Junegrass (KOMA)	---
			Navarretia (NAVAR)	---
			Rattlesnake brome (BRBR5)	---
590: Vistarobles	---	---	Navarretia (NAVAR)	---
			Coyote thistle (ERCA33)	---
			Soft blow wives (ACMO2)	---
			Fremont's tidytips (LAFR2)	---
			Goldfields (LASTH)	---
			Yellow carpet (BLNAN)	---
			Medusahead (TACA8)	---
			Filaree (ERODI)	---
			Hairgrass (DESCH)	---
			Soft chess (BRHOH)	---
			Bluestars (BRMI3)	---
Redding	---	---	Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Ripgut brome (BRDI3)	---
			Wild oat (AVFA)	---
			Rose clover (TRHI4)	---
			White brodiaea (TRHY3)	---
			Wild onion (ALLIU)	---
			Bluedicks (DICAC5)	---
			Dandelion (TARAX)	---
			Medusahead (TACA8)	---
			Coyote thistle (ERCA33)	---
Argonaut taxadjunct	Blue oak (QUDO)	---	Wild oat (AVFA)	---
	Foothill pine (PISA2)	---	Soft chess (BRHOH)	---
	Interior live oak (QUWI2)	---	Ripgut brome (BRDI3)	---
			Hedgehog dogtail (CYEC)	---
			Red clover (TRPR2)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Medusahead (TACA8)	---
Haploxererts	---	---	Soft chess (BRHOH)	---
			Medusahead (TACA8)	---
			Hedgehog dogtail (CYEC)	---
			Tarweed (HEMIZ)	---
			Brodiaea (BRODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
603:				
Oroville--------	---	---	Soft chess (BRHOH)	---
			Wild oat (AVFA)	---
			Medusahead (TACA8)	---
			Mediterranean barley (HOMUL)	---
			Filaree (ERODI)	---
			Red brome (BRRU2)	---
			Italian ryegrass (LOPEM2)	---
			Pepperweed (LEPID)	---
			Vinegarweed (TRLA4)	---
			Goldfields (LASTH)	---
			Butter-n-eggs (TRERE2)	---
			Bluedicks (DICAC5)	---
			White brodiaea (TRHY3)	---
			Cowbag clover (TRDE)	---
			Fremont's tidytips (LAFR2)	---
			Soft blow wives (ACMO2)	---
			Popcornflower (PLAGI)	---
			Yellow starthistle (CESO3)	---
			Coyote thistle (ERCA33)	---
Thermalito------	---	---	Soft chess (BRHOH)	---
			Wild oat (AVFA)	---
			Filaree (ERODI)	---
			Medusahead (TACA8)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Mouse barley (HOMAG)	---
			Italian ryegrass (LOPEM2)	---
			Clover (TRIFO)	---
			Vetch (VICIA)	---
			Bluedicks (DICAC5)	---
			Purple clarkia (CLPU2)	---
			Pepperweed (LEPID)	---
			Bluestars (BRMI3)	---
			Popcornflower (PLAGI)	---
Fernandez-------	---	---	Soft chess (BRHOH)	---
			Ripgut brome (BRDI3)	---
			Wild oat (AVFA)	---
			Mediterranean barley (HOMUL)	---
			Italian ryegrass (LOPEM2)	---
			Filaree (ERODI)	---
			Rose clover (TRHI4)	---
			Bluedicks (DICAC5)	---
			Brodiaea (BRODI)	---
			Fiddleneck (AMSIN)	---
			Vetch (VICIA)	---
			Annual lupine (LUBI)	---
			Medusahead (TACA8)	---
			Mullein (VERBA)	---
			Dandelion (TARAX)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
603:				
Thompsonflat----	---	---	Italian ryegrass (LOPEM2)	---
			Wild oat (AVFA)	---
			Soft chess (BRHOH)	---
			Red brome (BRRU2)	---
			Ripgut brome (BRDI3)	---
			Filaree (ERODI)	---
			Clover (TRIFO)	---
			Annual lupine (LUBI)	---
			Bluedicks (DICAC5)	---
			Fiddleneck (AMSIN)	---
605:				
Duric Xerarents.				
Oroville--------	---	---	Soft chess (BRHOH)	---
			Wild oat (AVFA)	---
			Medusahead (TACA8)	---
			Mediterranean barley (HOMUL)	---
			Filaree (ERODI)	---
			Red brome (BRRU2)	---
			Italian ryegrass (LOPEM2)	---
			Pepperweed (LEPID)	---
			Vinegarweed (TRLA4)	---
			Goldfields (LASTH)	---
			Butter-n-eggs (TRERE2)	---
			Bluedicks (DICAC5)	---
			White brodiaea (TRHY3)	---
			Cowbag clover (TRDE)	---
			Fremont's tidytips (LAFR2)	---
			Soft blow wives (ACMO2)	---
			Popcornflower (PLAGI)	---
			Yellow starthistle (CESO3)	---
			Coyote thistle (ERCA33)	---
606:				
Redtough--------	---	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Medusahead (TACA8)	---
			Wild oat (AVFA)	---
			Popcornflower (PLAGI)	---
			Shootingstar (DODEC)	---
			Brodiaea (BRODI)	---
			Red brome (BRRU2)	---
			Ripgut brome (BRDI3)	---
			Mouse barley (HOMAG)	---
			Butter-n-eggs (TRERE2)	---
			Bluedicks (DICAC5)	---
			Fremont's tidytips (LAFR2)	---
			Goldfields (LASTH)	---
			Yellow carpet (BLNAN)	---
			Soap plant (CHLOR3)	---
			Yellow starthistle (CESO3)	---
			Mediterranean barley (HOMUL)	---
			Vetch (VICIA)	---
			Hairypink (PEDU2)	---
			Dandelion (TARAX)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
606:				
Fallager--------	---	---	Filaree (ERODI)	---
			Medusahead (TACA8)	---
			Italian ryegrass (LOPEM2)	---
			Ripgut brome (BRDI3)	---
			Soft chess (BRHOH)	---
			Butter-n-eggs (TRERE2)	---
			Cowbag clover (TRDE)	---
			Mouse barley (HOMAG)	---
			Goldfields (LASTH)	---
			Fremont's tidytips (LAFR2)	---
			Pepperweed (LEPID)	---
			Navarretia (NAVAR)	---
			Popcornflower (PLAGI)	---
			Vinegarweed (TRLA4)	---
			Fitch's spikeweed (HEFI)	---
			Brodiaea (BRODI)	---
			Wild onion (ALLIU)	---
Anita----------	---	---	Red brome (BRRU2)	---
			Calicoflower (DOWNI)	---
			Coyote thistle (ERCA33)	---
			Goldfields (LASTH)	---
			White meadowfoam (LIALA)	---
			Italian ryegrass (LOPEM2)	---
			Popcornflower (PLAGI)	---
			Medusahead (TACA8)	---
			Butter-n-eggs (TRERE2)	---
			Clover (TRIFO)	---
609:				
Anita----------	---	---	Ryegrass (LOLIU)	---
			Clover (TRIFO)	---
			Vinegarweed (TRLA4)	---
			Coyote thistle (ERCA33)	---
			Butter-n-eggs (TRERE2)	---
			Navarretia (NAVAR)	---
			Brodiaea (BRODI)	---
			Spikerush (ELEOC)	---
			Meadowfoam (LIMNA)	---
			Fremont's deathcamas (ZIFR)	---
Tuscan taxadjunct-----	---	---	Medusahead (TACA8)	---
			Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Red clover (TRPR2)	---
			Italian ryegrass (LOPEM2)	---
			Brodiaea (BRODI)	---
			Goldfields (LASTH)	---
			Fremont's tidytips (LAFR2)	---
			Butter-n-eggs (TRERE2)	---
			Fremont's deathcamas (ZIFR)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
614:				
Doemill---	---	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Mediterranean barley (HOMUL)	---
			Ripgut brome (BRDI3)	---
			Medusahead (TACA8)	---
			Clover (TRIFO)	---
			Hansen's spikemoss (SEHA2)	---
			Red brome (BRRU2)	---
			Goldfields (LASTH)	---
			Brodiaea (BRODI)	---
			Wild oat (AVFA)	---
			Ryegrass (LOLIU)	---
			Hairypink (PEDU2)	---
			Fremont's tidytips (LAFR2)	---
			Dandelion (TARAX)	---
			Popcornflower (PLAGI)	---
			Butter-n-eggs (TRERE2)	---
			Lupine (LUPIN)	---
			Bluedicks (DICAC5)	---
			Soap plant (CHLOR3)	---
			Yellow starthistle (CESO3)	---
			Shootingstar (DODEC)	---
			Blue oak (QUDO)	---
			Navarretia (NAVAR)	---
			Foothill pine (PISA2)	---
Jokerst---	---	---	Ryegrass (LOLIU)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Foxtail fescue (FEME)	---
			Mouse barley (HOMAG)	---
			Brodiaea (BRODI)	---
			Ripgut brome (BRDI3)	---
			Clover (TRIFO)	---
			Goldfields (LASTH)	---
			Butter-n-eggs (TRERE2)	---
			Navarretia (NAVAR)	---
			Fremont's tidytips (LAFR2)	---
			Sierra mock stonecrop (SEPU4)	---
			Hansen's spikemoss (SEHA2)	---
			Cowbag clover (TRDE)	---
			Soft blow wives (ACMO2)	---
			Coyote thistle (ERCA33)	---
			Soap plant (CHLOR3)	---
			Wild oat (AVFA)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
615:				
Doemill---	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Mediterranean barley (HOMUL)	---
			Ripgut brome (BRDI3)	---
			Medusahead (TACA8)	---
			Clover (TRIFO)	---
			Hansen's spikemoss (SEHA2)	---
			Red brome (BRRU2)	---
			Goldfields (LASTH)	---
			Brodiaea (BRODI)	---
			Wild oat (AVFA)	---
			Ryegrass (LOLIU)	---
			Hairypink (PEDU2)	---
			Fremont's tidytips (LAFR2)	---
			Dandelion (TARAX)	---
			Popcornflower (PLAGI)	---
			Butter-n-eggs (TRERE2)	---
			Lupine (LUPIN)	---
			Bluedicks (DICAC5)	---
			Soap plant (CHLOR3)	---
			Yellow starthistle (CESO3)	---
			Shootingstar (DODEC)	---
			Blue oak (QUDO)	---
			Navarretia (NAVAR)	---
			Foothill pine (PISA2)	---
Jokerst---	---	---	Ryegrass (LOLIU)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Foxtail fescue (FEME)	---
			Mouse barley (HOMAG)	---
			Brodiaea (BRODI)	---
			Ripgut brome (BRDI3)	---
			Clover (TRIFO)	---
			Goldfields (LASTH)	---
			Butter-n-eggs (TRERE2)	---
			Navarretia (NAVAR)	---
			Fremont's tidytips (LAFR2)	---
			Sierra mock stonecrop (SEPU4)	---
			Hansen's spikemoss (SEHA2)	---
			Cowbag clover (TRDE)	---
			Soft blow wives (ACMO2)	---
			Coyote thistle (ERCA33)	---
			Soap plant (CHLOR3)	---
			Wild oat (AVFA)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
616:				
Jokerst---	---	---	Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Goldfields (LASTH)	---
			Foxtail fescue (FEME)	---
			Pacific poison oak (TODI)	---
			Ripgut brome (BRDI3)	---
			Hansen's spikemoss (SEHA2)	---
			Mouse barley (HOMAG)	---
			Hairypink (PEDU2)	---
			Navarretia (NAVAR)	---
			Sierra mock stonecrop (SEPU4)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Red brome (BRRU2)	---
			Manzanita (ARCTO3)	---
			Wild oat (AVFA)	---
			Buckbrush (CECU)	---
			Medusahead (TACA8)	---
			Yellow starthistle (CESO3)	---
			Foothill pine (PISA2)	---
Doemill---	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Mediterranean barley (HOMUL)	---
			Ripgut brome (BRDI3)	---
			Medusahead (TACA8)	---
			Clover (TRIFO)	---
			Hansen's spikemoss (SEHA2)	---
			Red brome (BRRU2)	---
			Goldfields (LASTH)	---
			Brodiaea (BRODI)	---
			Wild oat (AVFA)	---
			Ryegrass (LOLIU)	---
			Hairypink (PEDU2)	---
			Fremont's tidytips (LAFR2)	---
			Dandelion (TARAX)	---
			Popcornflower (PLAGI)	---
			Butter-n-eggs (TRERE2)	---
			Lupine (LUPIN)	---
			Bluedicks (DICAC5)	---
			Soap plant (CHLOR3)	---
			Yellow starthistle (CESO3)	---
			Shootingstar (DODEC)	---
			Blue oak (QUDO)	---
			Navarretia (NAVAR)	---
			Foothill pine (PISA2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
616: Typic Haploxeralfs---	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Manzanita (ARCTO3)	---
			Buckbrush (CECU)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Wild oat (AVFA)	---
			Brodiaea (BRODI)	---
			Red brome (BRRU2)	---
			Mediterranean barley (HOMUL)	---
			Medusahead (TACA8)	---
			California buckeye (AECA)	---
			Ripgut brome (BRDI3)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Hairypink (PEDU2)	---
			Mouse barley (HOMAG)	---
			Toyon (HEAR5)	---
			Yerba santa (ERIOD)	---
			California buckthorn (FRCAT2)	---
			Miners lettuce (CLPE)	---
			Navarretia (NAVAR)	---
			California redbud (CEOR9)	---
			Scrub oak (QUBE5)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
617:				
Doemill---	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Mediterranean barley (HOMUL)	---
			Ripgut brome (BRDI3)	---
			Medusahead (TACA8)	---
			Clover (TRIFO)	---
			Hansen's spikemoss (SEHA2)	---
			Red brome (BRRU2)	---
			Goldfields (LASTH)	---
			Brodiaea (BRODI)	---
			Wild oat (AVFA)	---
			Ryegrass (LOLIU)	---
			Hairypink (PEDU2)	---
			Fremont's tidytips (LAFR2)	---
			Dandelion (TARAX)	---
			Popcornflower (PLAGI)	---
			Butter-n-eggs (TRERE2)	---
			Lupine (LUPIN)	---
			Bluedicks (DICAC5)	---
			Soap plant (CHLOR3)	---
			Yellow starthistle (CESO3)	---
			Shootingstar (DODEC)	---
			Blue oak (QUDO)	---
			Navarretia (NAVAR)	---
			Foothill pine (PISA2)	---
Jokerst---	---	---	Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Goldfields (LASTH)	---
			Foxtail fescue (FEME)	---
			Pacific poison oak (TODI)	---
			Ripgut brome (BRDI3)	---
			Hansen's spikemoss (SEHA2)	---
			Mouse barley (HOMAG)	---
			Hairypink (PEDU2)	---
			Navarretia (NAVAR)	---
			Sierra mock stonecrop (SEPU4)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Red brome (BRRU2)	---
			Manzanita (ARCTO3)	---
			Wild oat (AVFA)	---
			Buckbrush (CECU)	---
			Medusahead (TACA8)	---
			Yellow starthistle (CESO3)	---
			Foothill pine (PISA2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
617:				
Typic Haploxeralfs---	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Manzanita (ARCTO3)	---
			Buckbrush (CECU)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Wild oat (AVFA)	---
			Brodiaea (BRODI)	---
			Red brome (BRRU2)	---
			Mediterranean barley (HOMUL)	---
			Medusahead (TACA8)	---
			California buckeye (AECA)	---
			Ripgut brome (BRDI3)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Hairypink (PEDU2)	---
			Mouse barley (HOMAG)	---
			Toyon (HEAR5)	---
			Yerba santa (ERIOD)	---
			California buckthorn (FRCAT2)	---
			Miners lettuce (CLPE)	---
			Navarretia (NAVAR)	---
			California redbud (CEOR9)	---
			Scrub oak (QUBE5)	---
619:				
Carhart taxadjunct-----	---	---	Ryegrass (LOLIU)	---
			Navarretia (NAVAR)	---
			Mediterranean barley (HOMUL)	---
			Brodiaea (BRODI)	---
			Soft chess (BRHOH)	---
			Coyote thistle (ERCA33)	---
			Spikerush (ELEOC)	---
			Soft blow wives (ACMO2)	---
			Goldfields (LASTH)	---
			Clover (TRIFO)	---
			Fremont's deathcamas (ZIFR)	---
			Meadowfoam (LIMNA)	---
			Butter-n-eggs (TRERE2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
620:				
Doemill---	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
			Red brome (BRRU2)	---
			Hansen's spikemoss (SEHA2)	---
			Medusahead (TACA8)	---
			Pacific poison oak (TODI)	---
			Clover (TRIFO)	---
			Yellow starthistle (CESO3)	---
			Brodiaea (BRODI)	---
			Lupine (LUPIN)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Manzanita (ARCTO3)	---
			Interior live oak (QUWI2)	---
Jokerst---	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Goldfields (LASTH)	---
			Foxtail fescue (FEME)	---
			Pacific poison oak (TODI)	---
			Ripgut brome (BRDI3)	---
			Hansen's spikemoss (SEHA2)	---
			Mouse barley (HOMAG)	---
			Hairypink (PEDU2)	---
			Navarretia (NAVAR)	---
			Sierra mock stonecrop (SEPU4)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Red brome (BRRU2)	---
			Manzanita (ARCTO3)	---
			Wild oat (AVFA)	---
			Buckbrush (CECU)	---
			Medusahead (TACA8)	---
			Yellow starthistle (CESO3)	---
			Foothill pine (PISA2)	---
Ultic Haploxeralfs, thermic---	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Foothill pine (PISA2)	---	Yellow starthistle (CESO3)	---
	Interior live oak (QUWI2)	---	Clover (TRIFO)	---
			Filaree (ERODI)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Wild oat (AVFA)	---
			Hairypink (PEDU2)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Manzanita (ARCTO3)	---
			Interior live oak (QUWI2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
621:				
Doemill---	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
			Red brome (BRRU2)	---
			Hansen's spikemoss (SEHA2)	---
			Medusahead (TACA8)	---
			Pacific poison oak (TODI)	---
			Clover (TRIFO)	---
			Yellow starthistle (CESO3)	---
			Brodiaea (BRODI)	---
			Lupine (LUPIN)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Manzanita (ARCTO3)	---
			Interior live oak (QUWI2)	---
Jokerst---	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Goldfields (LASTH)	---
			Foxtail fescue (FEME)	---
			Pacific poison oak (TODI)	---
			Ripgut brome (BRDI3)	---
			Hansen's spikemoss (SEHA2)	---
			Mouse barley (HOMAG)	---
			Hairypink (PEDU2)	---
			Navarretia (NAVAR)	---
			Sierra mock stonecrop (SEPU4)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Red brome (BRRU2)	---
			Manzanita (ARCTO3)	---
			Wild oat (AVFA)	---
			Buckbrush (CECU)	---
			Medusahead (TACA8)	---
			Yellow starthistle (CESO3)	---
			Foothill pine (PISA2)	---
Ultic Haploxeralfs, thermic---	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Foothill pine (PISA2)	---	Yellow starthistle (CESO3)	---
	Interior live oak (QUWI2)	---	Clover (TRIFO)	---
			Filaree (ERODI)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Wild oat (AVFA)	---
			Hairypink (PEDU2)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Manzanita (ARCTO3)	---
			Interior live oak (QUWI2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
622: Xerorthents, shallow--------	---	---	Soft chess (BRHOH)	---
			Yellow starthistle (CESO3)	---
			Wild oat (AVFA)	---
			Hedgehog dogtail (CYEC)	---
			Red brome (BRRU2)	---
			Pacific poison oak (TODI)	---
			Ripgut brome (BRDI3)	---
			Clover (TRIFO)	---
			Hairypink (PEDU2)	---
			Ryegrass (LOLIU)	---
			Brodiaea (BRODI)	---
			Hansen's spikemoss (SEHA2)	---
			Mediterranean barley (HOMUL)	---
			Navarretia (NAVAR)	---
			Filaree (ERODI)	---
			Beggartick (sticktights) (BIFR)	---
			Dandelion (TARAX)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Manzanita (ARCTO3)	---
			California buckeye (AECA)	---
			Scrub oak (QUBE5)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
622:				
Typic Haploxeralfs---	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Manzanita (ARCTO3)	---
			Buckbrush (CECU)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Wild oat (AVFA)	---
			Brodiaea (BRODI)	---
			Red brome (BRRU2)	---
			Mediterranean barley (HOMUL)	---
			Medusahead (TACA8)	---
			California buckeye (AECA)	---
			Ripgut brome (BRDI3)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Hairypink (PEDU2)	---
			Mouse barley (HOMAG)	---
			Toyon (HEAR5)	---
			Yerba santa (ERIOD)	---
			California buckthorn (FRCAT2)	---
			Miners lettuce (CLPE)	---
			Navarretia (NAVAR)	---
			California redbud (CEOR9)	---
			Scrub oak (QUBE5)	---
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
623: Xerorthents, shallow--------	---	---	Soft chess (BRHOH)	---
			Yellow starthistle (CESO3)	---
			Wild oat (AVFA)	---
			Hedgehog dogtail (CYEC)	---
			Red brome (BRRU2)	---
			Pacific poison oak (TODI)	---
			Ripgut brome (BRDI3)	---
			Clover (TRIFO)	---
			Hairypink (PEDU2)	---
			Ryegrass (LOLIU)	---
			Brodiaea (BRODI)	---
			Hansen's spikemoss (SEHA2)	---
			Mediterranean barley (HOMUL)	---
			Navarretia (NAVAR)	---
			Filaree (ERODI)	---
			Beggartick (sticktights) (BIFR)	---
			Dandelion (TARAX)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Manzanita (ARCTO3)	---
			California buckeye (AECA)	---
			Scrub oak (QUBE5)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
623:				
Typic Haploxeralfs---	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Manzanita (ARCTO3)	---
			Buckbrush (CECU)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Wild oat (AVFA)	---
			Brodiaea (BRODI)	---
			Red brome (BRRU2)	---
			Mediterranean barley (HOMUL)	---
			Medusahead (TACA8)	---
			California buckeye (AECA)	---
			Ripgut brome (BRDI3)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Hairypink (PEDU2)	---
			Mouse barley (HOMAG)	---
			Toyon (HEAR5)	---
			Yerba santa (ERIOD)	---
			California buckthorn (FRCAT2)	---
			Miners lettuce (CLPE)	---
			Navarretia (NAVAR)	---
			California redbud (CEOR9)	---
			Scrub oak (QUBE5)	---
Rock outcrop.				
624:				
Ultic Haploxeralfs, mesic----------	California black oak (QUKE)	---	Manzanita (ARCTO3)	---
			Buckbrush (CECU)	---
	Foothill pine (PISA2)	---	Scrub oak (QUBE5)	---
			Hedgehog dogtail (CYEC)	---
			California black oak (QUKE)	---
			Pacific poison oak (TODI)	---
			Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Buckbrush (CECU)	---
			Barbed goatgrass (AETR)	---
			Clover (TRIFO)	---
			Red brome (BRRU2)	---
			Ripgut brome (BRDI3)	---
			Yellow starthistle (CESO3)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
624:				
Rockstripe------	---	---	Soft chess (BRHOH)	---
			Red brome (BRRU2)	---
			Wild oat (AVFA)	---
			Hairypink (PEDU2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Foxtail fescue (FEME)	---
			Hansen's spikemoss (SEHA2)	---
			Buckbrush (CECU)	---
			Manzanita (ARCTO3)	---
			California laurel (UMCA)	---
			Scrub oak (QUBE5)	---
			Yerba santa (ERIOD)	---
			Foothill pine (PISA2)	---
			Canyon live oak (QUCH2)	---
			Interior live oak (QUWI2)	---
			Yellow starthistle (CESO3)	---
			Buckbrush (CECU)	---
625:				
Ultic Haploxeralfs, mesic----------	California black oak (QUKE)	---	Manzanita (ARCTO3)	---
			Buckbrush (CECU)	---
	Foothill pine (PISA2)	---	Scrub oak (QUBE5)	---
			Hedgehog dogtail (CYEC)	---
			California black oak (QUKE)	---
			Pacific poison oak (TODI)	---
			Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Buckbrush (CECU)	---
			Barbed goatgrass (AETR)	---
			Clover (TRIFO)	---
			Red brome (BRRU2)	---
			Ripgut brome (BRDI3)	---
			Yellow starthistle (CESO3)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
625:				
Rockstripe------	---	---	Soft chess (BRHOH)	---
			Red brome (BRRU2)	---
			Wild oat (AVFA)	---
			Hairypink (PEDU2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Foxtail fescue (FEME)	---
			Hansen's spikemoss (SEHA2)	---
			Buckbrush (CECU)	---
			Manzanita (ARCTO3)	---
			California laurel (UMCA)	---
			Scrub oak (QUBE5)	---
			Yerba santa (ERIOD)	---
			Foothill pine (PISA2)	---
			Canyon live oak (QUCH2)	---
			Interior live oak (QUWI2)	---
			Yellow starthistle (CESO3)	---
			Buckbrush (CECU)	---
626:				
Ultic Haploxeralfs---	Canyon live oak (QUCH2)	---	Scrub oak (QUBE5)	---
	California black oak (QUKE)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	Interior live oak (QUWI2)	---
			California laurel (UMCA)	---
			Pacific poison oak (TODI)	---
			Manzanita (ARCTO3)	---
			Foothill pine (PISA2)	---
			California buckeye (AECA)	---
			Deerbrush (CEIN3)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			California redbud (CEOR9)	---
			Buckbrush (CECU)	---
			Buckbrush (CECU)	---
Rockstripe------	---	---	Soft chess (BRHOH)	---
			Red brome (BRRU2)	---
			Wild oat (AVFA)	---
			Hairypink (PEDU2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Foxtail fescue (FEME)	---
			Hansen's spikemoss (SEHA2)	---
			Buckbrush (CECU)	---
			Manzanita (ARCTO3)	---
			California laurel (UMCA)	---
			Scrub oak (QUBE5)	---
			Yerba santa (ERIOD)	---
			Foothill pine (PISA2)	---
			Canyon live oak (QUCH2)	---
			Interior live oak (QUWI2)	---
			Yellow starthistle (CESO3)	---
			Buckbrush (CECU)	---
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
627:				
Ultic Haploxeralfs---	Canyon live oak (QUCH2)	---	Scrub oak (QUBE5)	---
	California black oak (QUKE)	---	Canyon live oak (QUCH2)	---
			California black oak (QUKE)	---
	Interior live oak (QUWI2)	---		
	Foothill pine (PISA2)	---	Interior live oak (QUWI2)	---
			California laurel (UMCA)	---
			Pacific poison oak (TODI)	---
			Manzanita (ARCTO3)	---
			Foothill pine (PISA2)	---
			California buckeye (AECA)	---
			Deerbrush (CEIN3)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			California redbud (CEOR9)	---
			Buckbrush (CECU)	---
			Buckbrush (CECU)	---
Rockstripe------	---	---	Soft chess (BRHOH)	---
			Red brome (BRRU2)	---
			Wild oat (AVFA)	---
			Hairypink (PEDU2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Foxtail fescue (FEME)	---
			Hansen's spikemoss (SEHA2)	---
			Buckbrush (CECU)	---
			Manzanita (ARCTO3)	---
			California laurel (UMCA)	---
			Scrub oak (QUBE5)	---
			Yerba santa (ERIOD)	---
			Foothill pine (PISA2)	---
			Canyon live oak (QUCH2)	---
			Interior live oak (QUWI2)	---
			Yellow starthistle (CESO3)	---
			Buckbrush (CECU)	---
Rock outcrop.				
628:				
Rockstripe------	---	---	Soft chess (BRHOH)	---
			Red brome (BRRU2)	---
			Wild oat (AVFA)	---
			Hairypink (PEDU2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Foxtail fescue (FEME)	---
			Hansen's spikemoss (SEHA2)	---
			Buckbrush (CECU)	---
			Manzanita (ARCTO3)	---
			California laurel (UMCA)	---
			Scrub oak (QUBE5)	---
			Yerba santa (ERIOD)	---
			Foothill pine (PISA2)	---
			Canyon live oak (QUCH2)	---
			Interior live oak (QUWI2)	---
			Yellow starthistle (CESO3)	---
			Buckbrush (CECU)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
628:				
Ultic Haploxeralfs---	Canyon live oak (QUCH2)	---	Scrub oak (QUBE5)	---
	California black oak (QUKE)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	Interior live oak (QUWI2)	---
			California laurel (UMCA)	---
			Pacific poison oak (TODI)	---
			Manzanita (ARCTO3)	---
			Foothill pine (PISA2)	---
			California buckeye (AECA)	---
			Deerbrush (CEIN3)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			California redbud (CEOR9)	---
			Buckbrush (CECU)	---
Rock outcrop.				
629:				
Slideland-------	Blue oak (QUDO)	---	Toyon (HEAR5)	5
	Canyon live oak (QUCH2)	---	Hedgehog dogtail (CYEC)	---
	Valley oak (QULO)	---	Western brackenfern (PTAQ)	5
	Ponderosa pine (PIPO)	75	California laurel (UMCA)	5
	California black oak (QUKE)	20	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	5	Hedgehog dogtail (CYEC)	7
			Whiteleaf manzanita (ARMA)	1
			Orcutt brome (BROR2)	1
			Incense cedar (CADE27)	1
			Deerbrush (CEIN3)	1
			Pacific dogwood (CONU4)	1
			Canyon live oak (QUCH2)	1
			California black oak (QUKE)	1
			California wild grape (VICA5)	1
			Bigleaf maple (ACMA3)	---
			Wild oat (AVFA)	---
			Beggartick (sticktights) (BIFR)	---
			Soft chess (BRHOH)	---
			Yellow starthistle (CESO3)	---
			California buckthorn (FRCAT2)	---
			Foothill pine (PISA2)	---
			Blue oak (QUDO)	---
			Clover (TRIFO)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
630:				
Slideland-------	Blue oak (QUDO)	---	Toyon (HEAR5)	5
	Canyon live oak (QUCH2)	---	Hedgehog dogtail (CYEC)	---
	Valley oak (QULO)	---	Western brackenfern (PTAQ)	5
	Ponderosa pine (PIPO)	75		
	California black oak (QUKE)	20	California laurel (UMCA)	5
			Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	5	Hedgehog dogtail (CYEC)	7
			Whiteleaf manzanita (ARMA)	1
			Orcutt brome (BROR2)	1
			Incense cedar (CADE27)	1
			Deerbrush (CEIN3)	1
			Pacific dogwood (CONU4)	1
			Canyon live oak (QUCH2)	1
			California black oak (QUKE)	1
			California wild grape (VICA5)	1
			Bigleaf maple (ACMA3)	---
			Wild oat (AVFA)	---
			Beggartick (sticktights) (BIFR)	---
			Soft chess (BRHOH)	---
			Yellow starthistle (CESO3)	---
			California buckthorn (FRCAT2)	---
			Foothill pine (PISA2)	---
			Blue oak (QUDO)	---
			Clover (TRIFO)	---
631:				
Slideland-------	Blue oak (QUDO)	---	Toyon (HEAR5)	5
	Canyon live oak (QUCH2)	---	Hedgehog dogtail (CYEC)	---
	Valley oak (QULO)	---	Western brackenfern (PTAQ)	5
	Ponderosa pine (PIPO)	75		
	California black oak (QUKE)	20	California laurel (UMCA)	5
			Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	5	Hedgehog dogtail (CYEC)	7
			Whiteleaf manzanita (ARMA)	1
			Orcutt brome (BROR2)	1
			Incense cedar (CADE27)	1
			Deerbrush (CEIN3)	1
			Pacific dogwood (CONU4)	1
			Canyon live oak (QUCH2)	1
			California black oak (QUKE)	1
			California wild grape (VICA5)	1
			Bigleaf maple (ACMA3)	---
			Wild oat (AVFA)	---
			Beggartick (sticktights) (BIFR)	---
			Soft chess (BRHOH)	---
			Yellow starthistle (CESO3)	---
			California buckthorn (FRCAT2)	---
			Foothill pine (PISA2)	---
			Blue oak (QUDO)	---
			Clover (TRIFO)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
632:				
Ultic Haploxeralfs, conglomerate, very deep------	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---		
	California black oak (QUKE)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
	Douglas-fir (PSME)	---	Pacific poison oak (TODI)	---
	Ponderosa pine (PIPO)	---	Toyon (HEAR5)	---
	Incense cedar (CADE27)	---	Scrub oak (QUBE5)	---
	Valley oak (QULO)	---	Manzanita (ARCTO3)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Buckbrush (CECU)	---
			Blue oak (QUDO)	---
			Tanoak (LIDE3)	---
			Douglas-fir (PSME)	---
			Bigleaf maple (ACMA3)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
			Valley oak (QULO)	---
			Yellow starthistle (CESO3)	---
			Wild oat (AVFA)	---
			Clover (TRIFO)	---
			Red brome (BRRU2)	---
			Hairypink (PEDU2)	---
Ultic Haploxeralfs, conglomerate, moderately deep	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	California black oak (QUKE)	---	Hedgehog dogtail (CYEC)	---
			Toyon (HEAR5)	---
			Manzanita (ARCTO3)	---
			California black oak (QUKE)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Hairypink (PEDU2)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
633: Ultic Haploxeralfs, conglomerate, very deep------	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---		
	California black oak (QUKE)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
	Douglas-fir (PSME)	---	Pacific poison oak (TODI)	---
	Ponderosa pine (PIPO)	---	Toyon (HEAR5)	---
	Incense cedar (CADE27)	---	Scrub oak (QUBE5)	---
	Valley oak (QULO)	---	Manzanita (ARCTO3)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Buckbrush (CECU)	---
			Blue oak (QUDO)	---
			Tanoak (LIDE3)	---
			Douglas-fir (PSME)	---
			Bigleaf maple (ACMA3)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
			Valley oak (QULO)	---
			Yellow starthistle (CESO3)	---
			Wild oat (AVFA)	---
			Clover (TRIFO)	---
			Red brome (BRRU2)	---
			Hairypink (PEDU2)	---
Ultic Haploxeralfs, conglomerate, moderately deep	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	California black oak (QUKE)	---	Hedgehog dogtail (CYEC)	---
			Toyon (HEAR5)	---
			Manzanita (ARCTO3)	---
			California black oak (QUKE)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Hairypink (PEDU2)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
634:				
Ultic Haploxeralfs, conglomerate, very deep------	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---		
	California black oak (QUKE)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
	Douglas-fir (PSME)	---	Pacific poison oak (TODI)	---
	Ponderosa pine (PIPO)	---	Toyon (HEAR5)	---
	Incense cedar (CADE27)	---	Scrub oak (QUBE5)	---
	Valley oak (QULO)	---	Manzanita (ARCTO3)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Buckbrush (CECU)	---
			Blue oak (QUDO)	---
			Tanoak (LIDE3)	---
			Douglas-fir (PSME)	---
			Bigleaf maple (ACMA3)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
			Valley oak (QULO)	---
			Yellow starthistle (CESO3)	---
			Wild oat (AVFA)	---
			Clover (TRIFO)	---
			Red brome (BRRU2)	---
			Hairypink (PEDU2)	---
Ultic Haploxeralfs, conglomerate, moderately deep	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	California black oak (QUKE)	---	Hedgehog dogtail (CYEC)	---
			Toyon (HEAR5)	---
			Manzanita (ARCTO3)	---
			California black oak (QUKE)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Hairypink (PEDU2)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
635: Ultic Haploxeralfs, conglomerate, very deep------	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---		
	California black oak (QUKE)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
	Douglas-fir (PSME)	---	Pacific poison oak (TODI)	---
	Ponderosa pine (PIPO)	---	Toyon (HEAR5)	---
	Incense cedar (CADE27)	---	Scrub oak (QUBE5)	---
	Valley oak (QULO)	---	Manzanita (ARCTO3)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Buckbrush (CECU)	---
			Blue oak (QUDO)	---
			Tanoak (LIDE3)	---
			Douglas-fir (PSME)	---
			Bigleaf maple (ACMA3)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
			Valley oak (QULO)	---
			Yellow starthistle (CESO3)	---
			Wild oat (AVFA)	---
			Clover (TRIFO)	---
			Red brome (BRRU2)	---
			Hairypink (PEDU2)	---
Ultic Haploxeralfs, conglomerate, moderately deep	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	California black oak (QUKE)	---	Hedgehog dogtail (CYEC)	---
			Toyon (HEAR5)	---
			Manzanita (ARCTO3)	---
			California black oak (QUKE)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Hairypink (PEDU2)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
636:				
Ultic Haploxeralfs, conglomerate, moderately deep	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	California black oak (QUKE)	---	Hedgehog dogtail (CYEC)	---
			Toyon (HEAR5)	---
			Manzanita (ARCTO3)	---
			California black oak (QUKE)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Hairypink (PEDU2)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
Ultic Haploxeralfs, conglomerate, very deep------	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	California black oak (QUKE)	---	Hedgehog dogtail (CYEC)	---
	Douglas-fir (PSME)	---	Pacific poison oak (TODI)	---
	Ponderosa pine (PIPO)	---	Toyon (HEAR5)	---
	Incense cedar (CADE27)	---	Scrub oak (QUBE5)	---
	Valley oak (QULO)	---	Manzanita (ARCTO3)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			Buckbrush (CECU)	---
			Blue oak (QUDO)	---
			Tanoak (LIDE3)	---
			Douglas-fir (PSME)	---
			Bigleaf maple (ACMA3)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
			Valley oak (QULO)	---
			Yellow starthistle (CESO3)	---
			Wild oat (AVFA)	---
			Clover (TRIFO)	---
			Red brome (BRRU2)	---
			Hairypink (PEDU2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
637: Ultic Haploxeralfs, sandstone------	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	California black oak (QUKE)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Ponderosa pine (PIPO)	---
			Manzanita (ARCTO3)	---
			Deerbrush (CEIN3)	---
			California laurel (UMCA)	---
			Bigleaf maple (ACMA3)	---
			Toyon (HEAR5)	---
			Clover (TRIFO)	---
			Beggartick (sticktights) (BIFR)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
638: Ultic Haploxeralfs, sandstone------	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	California black oak (QUKE)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Ponderosa pine (PIPO)	---
			Manzanita (ARCTO3)	---
			Deerbrush (CEIN3)	---
			California laurel (UMCA)	---
			Bigleaf maple (ACMA3)	---
			Toyon (HEAR5)	---
			Clover (TRIFO)	---
			Beggartick (sticktights) (BIFR)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
639: Ultic Haploxeralfs, sandstone------	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	California black oak (QUKE)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Ponderosa pine (PIPO)	---
			Manzanita (ARCTO3)	---
			Deerbrush (CEIN3)	---
			California laurel (UMCA)	---
			Bigleaf maple (ACMA3)	---
			Toyon (HEAR5)	---
			Clover (TRIFO)	---
			Beggartick (sticktights) (BIFR)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---
640: Ultic Haploxeralfs, sandstone------	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	California black oak (QUKE)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
	Ponderosa pine (PIPO)	---	Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Ponderosa pine (PIPO)	---
			Manzanita (ARCTO3)	---
			Deerbrush (CEIN3)	---
			California laurel (UMCA)	---
			Bigleaf maple (ACMA3)	---
			Toyon (HEAR5)	---
			Clover (TRIFO)	---
			Beggartick (sticktights) (BIFR)	---
			Red brome (BRRU2)	---
			Yellow starthistle (CESO3)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
641: Ultic Haploxeralfs, sandstone------	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Douglas-fir (PSME)	---	Douglas-fir (PSME)	---
	California black oak (QUKE)	---	California black oak (QUKE)	---
	Incense cedar (CADE27)	---	Hedgehog dogtail (CYEC)	---
	Ponderosa pine (PIPO)	---	Incense cedar (CADE27)	---
			Pacific poison oak (TODI)	---
			Ponderosa pine (PIPO)	---
			Manzanita (ARCTO3)	---
			Deerbrush (CEIN3)	---
			California laurel (UMCA)	---
			Bigleaf maple (ACMA3)	---
			Toyon (HEAR5)	---
			California wild grape (VICA5)	---
			Beggartick (sticktights) (BIFR)	---
642: Chinacamp-------	Canyon live oak (QUCH2)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Blue oak (QUDO)	---	California wild grape (VICA5)	---
	Ponderosa pine (PIPO)	---	Bigleaf maple (ACMA3)	---
	California black oak (QUKE)	---	Blue oak (QUDO)	---
	Valley oak (QULO)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Ponderosa pine (PIPO)	---
			Valley oak (QULO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
643: Chinacamp-------	Canyon live oak (QUCH2)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Blue oak (QUDO)	---	California wild grape (VICA5)	---
	Ponderosa pine (PIPO)	---	Bigleaf maple (ACMA3)	---
	California black oak (QUKE)	---	Blue oak (QUDO)	---
	Valley oak (QULO)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Ponderosa pine (PIPO)	---
			Valley oak (QULO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
644:				
Chinacamp-------	Canyon live oak (QUCH2)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---		
	Blue oak (QUDO)	---	California laurel (UMCA)	---
	Ponderosa pine (PIPO)	---	California wild grape (VICA5)	---
	California black oak (QUKE)	---		
			Bigleaf maple (ACMA3)	---
	Valley oak (QULO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Canyon live oak (QUCH2)	---
			Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Ponderosa pine (PIPO)	---
			Valley oak (QULO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
645:				
Chinacamp-------	Canyon live oak (QUCH2)	---	California black oak (QUKE)	---
	Foothill pine (PISA2)	---		
	Blue oak (QUDO)	---	California laurel (UMCA)	---
	Ponderosa pine (PIPO)	---	California wild grape (VICA5)	---
	California black oak (QUKE)	---		
			Bigleaf maple (ACMA3)	---
	Valley oak (QULO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Canyon live oak (QUCH2)	---
			Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Ponderosa pine (PIPO)	---
			Valley oak (QULO)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
646:				
Coalcanyon taxadjunct-----	Blue oak (QUDO)	---	California buckeye (AECA)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Interior live oak (QUWI2)	---	Beggartick (sticktights) (BIFR)	---
	Valley oak (QULO)	---		
	Canyon live oak (QUCH2)	---	Blue oak (QUDO)	---
			Canyon live oak (QUCH2)	---
			Clover (TRIFO)	---
			Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Red brome (BRRU2)	---
			Soft chess (BRHOH)	---
			Toyon (HEAR5)	---
			Valley oak (QULO)	---
			Wild oat (AVFA)	---
			Yellow starthistle (CESO3)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
647:				
Coalcanyon taxadjunct-----	Blue oak (QUDO)	---	California buckeye (AECA)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Interior live oak (QUWI2)	---	Beggartick (sticktights) (BIFR)	---
	Valley oak (QULO)	---	Blue oak (QUDO)	---
	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
			Clover (TRIFO)	---
			Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Red brome (BRRU2)	---
			Soft chess (BRHOH)	---
			Toyon (HEAR5)	---
			Valley oak (QULO)	---
			Wild oat (AVFA)	---
			Yellow starthistle (CESO3)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
648:				
Coalcanyon taxadjunct-----	Blue oak (QUDO)	---	California buckeye (AECA)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Interior live oak (QUWI2)	---	Beggartick (sticktights) (BIFR)	---
	Valley oak (QULO)	---	Blue oak (QUDO)	---
	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
			Clover (TRIFO)	---
			Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Red brome (BRRU2)	---
			Soft chess (BRHOH)	---
			Toyon (HEAR5)	---
			Valley oak (QULO)	---
			Wild oat (AVFA)	---
			Yellow starthistle (CESO3)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
649:				
Coalcanyon taxadjunct-----	Blue oak (QUDO)	---	California buckeye (AECA)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Interior live oak (QUWI2)	---	Beggartick (sticktights) (BIFR)	---
	Valley oak (QULO)	---		
	Canyon live oak (QUCH2)	---	Blue oak (QUDO)	---
			Canyon live oak (QUCH2)	---
			Clover (TRIFO)	---
			Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Red brome (BRRU2)	---
			Soft chess (BRHOH)	---
			Toyon (HEAR5)	---
			Valley oak (QULO)	---
			Wild oat (AVFA)	---
			Yellow starthistle (CESO3)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
650:				
Schott----------	Ponderosa pine (PIPO)	50	Whiteleaf manzanita (ARMA)	20
	Douglas-fir (PSME)	25		
	Incense cedar (CADE27)	8	California buckthorn (FRCAT2)	10
	Canyon live oak (QUCH2)	7		
	California black oak (QUKE)	7	Incense cedar (CADE27)	8
			Pacific poison oak (TODI)	---
	Sugar pine (PILA)	3	Greenleaf manzanita (ARPA6)	8
			Douglas-fir (PSME)	5
			Canyon live oak (QUCH2)	5
			Lemmon ceanothus (CELE)	3
			California black oak (QUKE)	3
			Deerbrush (CEIN3)	3
			Western brackenfern (PTAQ)	3
			California laurel (UMCA)	3
			Ponderosa pine (PIPO)	1
			California torreya (TOCA)	1
651:				
Schott----------	Ponderosa pine (PIPO)	50	Whiteleaf manzanita (ARMA)	20
	Douglas-fir (PSME)	25		
	Incense cedar (CADE27)	8	California buckthorn (FRCAT2)	10
	Canyon live oak (QUCH2)	7		
	California black oak (QUKE)	7	Incense cedar (CADE27)	8
			Pacific poison oak (TODI)	---
	Sugar pine (PILA)	3	Greenleaf manzanita (ARPA6)	8
			Douglas-fir (PSME)	5
			Canyon live oak (QUCH2)	5
			Lemmon ceanothus (CELE)	3
			California black oak (QUKE)	3
			Deerbrush (CEIN3)	3
			Western brackenfern (PTAQ)	3
			California laurel (UMCA)	3
			Ponderosa pine (PIPO)	1
			California torreya (TOCA)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
652:				
Schott----------	Ponderosa pine (PIPO)	50	Whiteleaf manzanita (ARMA)	20
	Douglas-fir (PSME)	25		
	Incense cedar (CADE27)	8	California buckthorn (FRCAT2)	10
	Canyon live oak (QUCH2)	7		
	California black oak (QUKE)	7	Incense cedar (CADE27)	8
			Pacific poison oak (TODI)	---
	Sugar pine (PILA)	3	Greenleaf manzanita (ARPA6)	8
			Douglas-fir (PSME)	5
			Canyon live oak (QUCH2)	5
			Lemmon ceanothus (CELE)	3
			California black oak (QUKE)	3
			Deerbrush (CEIN3)	3
			Western brackenfern (PTAQ)	3
			California laurel (UMCA)	3
			Ponderosa pine (PIPO)	1
			California torreya (TOCA)	1
Rock outcrop.				
654:				
Coridge----------	Blue oak (QUDO)	---	Mediterranean barley (HOMUL)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
			Brodiaea (BRODI)	---
			Buckbrush (CECU)	---
			Buckbrush (CECU)	---
			Chamise (ADFA)	---
			Dandelion (TARAX)	---
			Filaree (ERODI)	---
			Foothill pine (PISA2)	---
			Foxtail fescue (FEME)	---
			Hairgrass (DESCH)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Navarretia (NAVAR)	---
			Red brome (BRRU2)	---
			Scrub oak (QUBE5)	---
			Soft chess (BRHOH)	---
			Yerba santa (ERIOD)	---
			Pacific poison oak (TODI)	---
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
655:				
Coridge---------	Blue oak (QUDO)	---	Mediterranean barley (HOMUL)	---
	Foothill pine (PISA2)	---		
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
			Brodiaea (BRODI)	---
			Buckbrush (CECU)	---
			Buckbrush (CECU)	---
			Chamise (ADFA)	---
			Dandelion (TARAX)	---
			Filaree (ERODI)	---
			Foothill pine (PISA2)	---
			Foxtail fescue (FEME)	---
			Hairgrass (DESCH)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Navarretia (NAVAR)	---
			Red brome (BRRU2)	---
			Scrub oak (QUBE5)	---
			Soft chess (BRHOH)	---
			Yerba santa (ERIOD)	---
			Pacific poison oak (TODI)	---
Rock outcrop.				
656:				
Rock outcrop.				
Coalcanyon taxadjunct-----	Blue oak (QUDO)	---	California buckeye (AECA)	---
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
	Interior live oak (QUWI2)	---	Beggartick (sticktights) (BIFR)	---
	Valley oak (QULO)	---		
	Canyon live oak (QUCH2)	---	Blue oak (QUDO)	---
			Canyon live oak (QUCH2)	---
			Clover (TRIFO)	---
			Deerbrush (CEIN3)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Manzanita (ARCTO3)	---
			Red brome (BRRU2)	---
			Soft chess (BRHOH)	---
			Toyon (HEAR5)	---
			Valley oak (QULO)	---
			Wild oat (AVFA)	---
			Yellow starthistle (CESO3)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
657:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6		
	Pacific madrone (ARME)	1	Greenleaf manzanita (ARPA6)	3
			Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Chawanakee------	Ponderosa pine (PIPO)	43	Canyon live oak (QUCH2)	10
	Sugar pine (PILA)	23	Whiteleaf manzanita (ARMA)	10
	White fir (ABCO)	14		
	Incense cedar (CADE27)	10	Greenleaf manzanita (ARPA6)	8
	Canyon live oak (QUCH2)	7		
	California black oak (QUKE)	3	Shrub tanoak (LIDEE)	7
			Sugar pine (PILA)	4
			Ponderosa pine (PIPO)	4
			White fir (ABCO)	4
			Incense cedar (CADE27)	2
			Whitethorn ceanothus (CECO)	2
			Sierra chinquapin (CHSE11)	2
			Western brackenfern (PTAQ)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
658:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Chawanakee------	Ponderosa pine (PIPO)	43	Canyon live oak (QUCH2)	10
	Sugar pine (PILA)	23	Whiteleaf manzanita (ARMA)	10
	White fir (ABCO)	14	Greenleaf manzanita (ARPA6)	8
	Incense cedar (CADE27)	10	Shrub tanoak (LIDEE)	7
	Canyon live oak (QUCH2)	7	Sugar pine (PILA)	4
	California black oak (QUKE)	3	Ponderosa pine (PIPO)	4
			White fir (ABCO)	4
			Incense cedar (CADE27)	2
			Whitethorn ceanothus (CECO)	2
			Sierra chinquapin (CHSE11)	2
			Western brackenfern (PTAQ)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
659:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6		
	Pacific madrone (ARME)	1	Greenleaf manzanita (ARPA6)	3
			Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Chawanakee------	Ponderosa pine (PIPO)	43	Canyon live oak (QUCH2)	10
	Sugar pine (PILA)	23	Whiteleaf manzanita (ARMA)	10
	White fir (ABCO)	14		
	Incense cedar (CADE27)	10	Greenleaf manzanita (ARPA6)	8
	Canyon live oak (QUCH2)	7		
	California black oak (QUKE)	3	Shrub tanoak (LIDEE)	7
			Sugar pine (PILA)	4
			Ponderosa pine (PIPO)	4
			White fir (ABCO)	4
			Incense cedar (CADE27)	2
			Whitethorn ceanothus (CECO)	2
			Sierra chinquapin (CHSE11)	2
			Western brackenfern (PTAQ)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
660:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Chawanakee------	Ponderosa pine (PIPO)	43	Canyon live oak (QUCH2)	10
	Sugar pine (PILA)	23	Whiteleaf manzanita (ARMA)	10
	White fir (ABCO)	14	Greenleaf manzanita (ARPA6)	8
	Incense cedar (CADE27)	10	Shrub tanoak (LIDEE)	7
	Canyon live oak (QUCH2)	7	Sugar pine (PILA)	4
	California black oak (QUKE)	3	Ponderosa pine (PIPO)	4
			White fir (ABCO)	4
			Incense cedar (CADE27)	2
			Whitethorn ceanothus (CECO)	2
			Sierra chinquapin (CHSE11)	2
			Western brackenfern (PTAQ)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
661:				
Millerridge-----	Blue oak (QUDO)	---	California buckthorn (FRCAT2)	---
	Canyon live oak (QUCH2)	---		
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
			Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Canyon live oak (QUCH2)	---
			Foothill pine (PISA2)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
			Yellow starthistle (CESO3)	---
Boxrobber-------	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Canyon live oak (QUCH2)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Hedgehog dogtail (CYEC)	---
			Canyon live oak (QUCH2)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Yellow starthistle (CESO3)	---
			Medusahead (TACA8)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
662:				
Millerridge-----	Blue oak (QUDO)	---	California buckthorn (FRCAT2)	---
	Canyon live oak (QUCH2)	---		
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
			Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Canyon live oak (QUCH2)	---
			Foothill pine (PISA2)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
			Yellow starthistle (CESO3)	---
Boxrobber-------	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Canyon live oak (QUCH2)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Hedgehog dogtail (CYEC)	---
			Canyon live oak (QUCH2)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Yellow starthistle (CESO3)	---
			Medusahead (TACA8)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
663:				
Millerridge-----	Blue oak (QUDO)	---	California buckthorn (FRCAT2)	---
	Canyon live oak (QUCH2)	---		
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
			Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Canyon live oak (QUCH2)	---
			Foothill pine (PISA2)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
			Yellow starthistle (CESO3)	---
Boxrobber-------	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Canyon live oak (QUCH2)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
			Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Hedgehog dogtail (CYEC)	---
			Canyon live oak (QUCH2)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Yellow starthistle (CESO3)	---
			Medusahead (TACA8)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
664:				
Millerridge-----	Blue oak (QUDO)	---	California buckthorn (FRCAT2)	---
	Canyon live oak (QUCH2)	---		
	Foothill pine (PISA2)	---	California laurel (UMCA)	---
			Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Canyon live oak (QUCH2)	---
			Foothill pine (PISA2)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
			Yellow starthistle (CESO3)	---
Boxrobber-------	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Canyon live oak (QUCH2)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
			Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Hedgehog dogtail (CYEC)	---
			Canyon live oak (QUCH2)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Yellow starthistle (CESO3)	---
			Medusahead (TACA8)	---
			Clover (TRIFO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
665:				
Surnuf----------	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4	Pacific madrone (ARME)	4
	Sugar pine (PILA)	3	California buckthorn (FRCAT2)	4
	Foothill pine (PISA2)	3	California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
Bigridge--------	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1
666:				
Surnuf----------	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4	Pacific madrone (ARME)	4
	Sugar pine (PILA)	3	California buckthorn (FRCAT2)	4
	Foothill pine (PISA2)	3	California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
666:				
Bigridge--------	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1
667:				
Surnuf----------	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4	Pacific madrone (ARME)	4
	Sugar pine (PILA)	3	California buckthorn (FRCAT2)	4
	Foothill pine (PISA2)	3	California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
Bigridge--------	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
668:				
Surnuf----------	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4	Pacific madrone (ARME)	4
	Sugar pine (PILA)	3	California buckthorn (FRCAT2)	4
	Foothill pine (PISA2)	3	California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
Bigridge--------	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1
669:				
Oroshore--------	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Pacific madrone (ARME)	---
			California redbud (CEOR9)	---
			Wild oat (AVFA)	---
			Clover (TRIFO)	---
			Wheatgrass (AGROP2)	---
			Orcutt brome (BROR2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
669:				
Mounthope--------	Blue oak (QUDO)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Interior live oak (QUWI2)	---
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
	Ponderosa pine (PIPO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Ponderosa pine (PIPO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
Dunstone--------	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Toyon (HEAR5)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
			Ryegrass (LOLIU)	---
670:				
Oroshore--------	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Pacific madrone (ARME)	---
			California redbud (CEOR9)	---
			Wild oat (AVFA)	---
			Clover (TRIFO)	---
			Wheatgrass (AGROP2)	---
			Orcutt brome (BROR2)	---
Mounthope--------	Blue oak (QUDO)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Interior live oak (QUWI2)	---
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
	Ponderosa pine (PIPO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Ponderosa pine (PIPO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
670:				
Dunstone--------	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Toyon (HEAR5)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
			Ryegrass (LOLIU)	---
671:				
Oroshore--------	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Pacific madrone (ARME)	---
			California redbud (CEOR9)	---
			Wild oat (AVFA)	---
			Clover (TRIFO)	---
			Wheatgrass (AGROP2)	---
			Orcutt brome (BROR2)	---
Mounthope--------	Blue oak (QUDO)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Interior live oak (QUWI2)	---
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
	Ponderosa pine (PIPO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Ponderosa pine (PIPO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
Dunstone--------	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Toyon (HEAR5)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
			Ryegrass (LOLIU)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
672:				
Oroshore--------	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
	Blue oak (QUDO)	---	Interior live oak (QUWI2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Pacific madrone (ARME)	---
			California redbud (CEOR9)	---
			Wild oat (AVFA)	---
			Clover (TRIFO)	---
			Wheatgrass (AGROP2)	---
			Orcutt brome (BROR2)	---
Mounthope--------	Blue oak (QUDO)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Interior live oak (QUWI2)	---
	Interior live oak (QUWI2)	---	Blue oak (QUDO)	---
	Ponderosa pine (PIPO)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			California buckthorn (FRCAT2)	---
			Ponderosa pine (PIPO)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
Dunstone--------	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Toyon (HEAR5)	---
			Wild oat (AVFA)	---
			Wheatgrass (AGROP2)	---
			Ryegrass (LOLIU)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
674:				
Chawanakee------	Ponderosa pine (PIPO)	43	Canyon live oak (QUCH2)	10
	Sugar pine (PILA)	23	Whiteleaf manzanita (ARMA)	10
	White fir (ABCO)	14		
	Incense cedar (CADE27)	10	Greenleaf manzanita (ARPA6)	8
	Canyon live oak (QUCH2)	7		
	California black oak (QUKE)	3	Shrub tanoak (LIDEE)	7
			Sugar pine (PILA)	4
			Ponderosa pine (PIPO)	4
			White fir (ABCO)	4
			Incense cedar (CADE27)	2
			Whitethorn ceanothus (CECO)	2
			Sierra chinquapin (CHSE11)	2
			Western brackenfern (PTAQ)	1
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6		
	Pacific madrone (ARME)	1	Greenleaf manzanita (ARPA6)	3
			Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
675:				
Clearhayes------	---	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Ryegrass (LOLIU)	---
			Medusahead (TACA8)	---
			Clover (TRIFO)	---
			Yellow starthistle (CESO3)	---
			Mediterranean barley (HOMUL)	---
			Popcornflower (PLAGI)	---
			Red brome (BRRU2)	---
			Fiddleneck (AMSIN)	---
			Mouse barley (HOMAG)	---
			Barbed goatgrass (AETR)	---
			Dandelion (TARAX)	---
			Brodiaea (BRODI)	---
			Vetch (VICIA)	---
			Blue oak (QUDO)	---
Hamslough-------	---	---	Ryegrass (LOLIU)	---
			Brodiaea (BRODI)	---
			Medusahead (TACA8)	---
			Coyote thistle (ERCA33)	---
			Spikerush (ELEOC)	---
			Filaree (ERODI)	---
			Navarretia (NAVAR)	---
			Clover (TRIFO)	---
			Mouse barley (HOMAG)	---
			Goldfields (LASTH)	---
			Fremont's tidytips (LAFR2)	---
			Meadowfoam (LIMNA)	---
			Soft blow wives (ACMO2)	---
			Fremont's deathcamas (ZIFR)	---
676:				
Carhart---------	---	---	Ryegrass (LOLIU)	---
			Medusahead (TACA8)	---
			Lupine (LUPIN)	---
			Soft chess (BRHOH)	---
			Mouse barley (HOMAG)	---
			Mediterranean barley (HOMUL)	---
			Brodiaea (BRODI)	---
			Spikerush (ELEOC)	---
			Filaree (ERODI)	---
			Clover (TRIFO)	---
			Vinegarweed (TRLA4)	---
			Popcornflower (PLAGI)	---
			Wild oat (AVFA)	---
			Hayfield tarweed (HECOL3)	---
			Coyote thistle (ERCA33)	---
			Butter-n-eggs (TRERE2)	---
			Fremont's deathcamas (ZIFR)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
676:				
Anita taxadjunct	---	---	Medusahead (TACA8)	---
			Ryegrass (LOLIU)	---
			Clover (TRIFO)	---
			Lupine (LUPIN)	---
			Vinegarweed (TRLA4)	---
			Mediterranean barley (HOMUL)	---
			Brodiaea (BRODI)	---
			Coyote thistle (ERCA33)	---
			Butter-n-eggs (TRERE2)	---
			Spikerush (ELEOC)	---
			Filaree (ERODI)	---
			Popcornflower (PLAGI)	---
			Soft chess (BRHOH)	---
			Navarretia (NAVAR)	---
			Fremont's deathcamas (ZIFR)	---
677:				
Tuscan----------	---	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Clover (TRIFO)	---
			Medusahead (TACA8)	---
			Mediterranean barley (HOMUL)	---
			Ryegrass (LOLIU)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Popcornflower (PLAGI)	---
			Brodiaea (BRODI)	---
			Shootingstar (DODEC)	---
			Dandelion (TARAX)	---
			Butter-n-eggs (TRERE2)	---
			Goldfields (LASTH)	---
			Fremont's tidytips (LAFR2)	---
			Navarretia (NAVAR)	---
			Hairypink (PEDU2)	---
			Soft blow wives (ACMO2)	---
Fallager--------	---	---	Ryegrass (LOLIU)	---
			Navarretia (NAVAR)	---
			Soft chess (BRHOH)	---
			Goldfields (LASTH)	---
			Brodiaea (BRODI)	---
			Spikerush (ELEOC)	---
			Mediterranean barley (HOMUL)	---
			Cowbag clover (TRDE)	---
			Popcornflower (PLAGI)	---
			Pepperweed (LEPID)	---
			Vinegarweed (TRLA4)	---
			Medusahead (TACA8)	---
			Mouse barley (HOMAG)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
677:				
Anita----------	---	---	Ryegrass (LOLIU)	---
			Clover (TRIFO)	---
			Vinegarweed (TRLA4)	---
			Coyote thistle (ERCA33)	---
			Butter-n-eggs (TRERE2)	---
			Navarretia (NAVAR)	---
			Brodiaea (BRODI)	---
			Spikerush (ELEOC)	---
			Meadowfoam (LIMNA)	---
			Fremont's deathcamas (ZIFR)	---
679:				
Lucksev---------	---	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Ryegrass (LOLIU)	---
			Clover (TRIFO)	---
			Mediterranean barley (HOMUL)	---
			Medusahead (TACA8)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Wild oat (AVFA)	---
			Brodiaea (BRODI)	---
			Goldfields (LASTH)	---
			Mouse barley (HOMAG)	---
			Popcornflower (PLAGI)	---
			Dandelion (TARAX)	---
			Barbed goatgrass (AETR)	---
			Navarretia (NAVAR)	---
Butteside--------	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Filaree (ERODI)	---
			Mediterranean barley (HOMUL)	---
			Clover (TRIFO)	---
			Medusahead (TACA8)	---
			Yellow starthistle (CESO3)	---
			Red brome (BRRU2)	---
			Ripgut brome (BRDI3)	---
			Wild oat (AVFA)	---
			Mouse barley (HOMAG)	---
			Barbed goatgrass (AETR)	---
			Popcornflower (PLAGI)	---
			Brodiaea (BRODI)	---
			Dandelion (TARAX)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
679:				
Carhart---	---	---	Ryegrass (LOLIU)	---
			Medusahead (TACA8)	---
			Lupine (LUPIN)	---
			Soft chess (BRHOH)	---
			Mouse barley (HOMAG)	---
			Mediterranean barley (HOMUL)	---
			Brodiaea (BRODI)	---
			Spikerush (ELEOC)	---
			Filaree (ERODI)	---
			Clover (TRIFO)	---
			Vinegarweed (TRLA4)	---
			Popcornflower (PLAGI)	---
			Wild oat (AVFA)	---
			Hayfield tarweed (HECOL3)	---
			Coyote thistle (ERCA33)	---
			Butter-n-eggs (TRERE2)	---
			Fremont's deathcamas (ZIFR)	---
680:				
Lucksev---	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
			Filaree (ERODI)	---
			Ryegrass (LOLIU)	---
			Clover (TRIFO)	---
			Mediterranean barley (HOMUL)	---
			Medusahead (TACA8)	---
			Ripgut brome (BRDI3)	---
			Red brome (BRRU2)	---
			Wild oat (AVFA)	---
			Brodiaea (BRODI)	---
			Goldfields (LASTH)	---
			Mouse barley (HOMAG)	---
			Popcornflower (PLAGI)	---
			Dandelion (TARAX)	---
			Barbed goatgrass (AETR)	---
			Blue oak (QUDO)	---
			Navarretia (NAVAR)	---
Butteside---	Blue oak (QUDO)	---	Soft chess (BRHOH)	---
	Foothill pine (PISA2)	---	Ryegrass (LOLIU)	---
			Filaree (ERODI)	---
			Mediterranean barley (HOMUL)	---
			Pacific poison oak (TODI)	---
			Clover (TRIFO)	---
			Medusahead (TACA8)	---
			Yellow starthistle (CESO3)	---
			Red brome (BRRU2)	---
			Ripgut brome (BRDI3)	---
			Wild oat (AVFA)	---
			Mouse barley (HOMAG)	---
			Barbed goatgrass (AETR)	---
			Popcornflower (PLAGI)	---
			Brodiaea (BRODI)	---
			Dandelion (TARAX)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			California buckeye (AECA)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
683:				
Typic Haploxeralfs, magnesic-------	Blue oak (QUDO)	---	Whiteleaf manzanita (ARMA)	---
	Foothill pine (PISA2)	---		
	Canyon live oak (QUCH2)	---	Buckbrush (CECU)	---
			Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Toyon (HEAR5)	---
			Canyon live oak (QUCH2)	---
Earlal----------	Blue oak (QUDO)	---	California laurel (UMCA)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Foothill pine (PISA2)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
Rock outcrop.				
684:				
Typic Haploxeralfs, magnesic-------	Blue oak (QUDO)	---	Ryegrass (LOLIU)	---
	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Canyon live oak (QUCH2)	---	Buckbrush (CECU)	---
			Medusahead (TACA8)	---
			Foothill pine (PISA2)	---
			Lupine (LUPIN)	---
			California laurel (UMCA)	---
			Soft chess (BRHOH)	---
			Pacific poison oak (TODI)	---
			Blue oak (QUDO)	---
			Mouse barley (HOMAG)	---
			Mediterranean barley (HOMUL)	---
			Toyon (HEAR5)	---
			Brodiaea (BRODI)	---
			Canyon live oak (QUCH2)	---
			Spikerush (ELEOC)	---
			Filaree (ERODI)	---
			Clover (TRIFO)	---
			Vinegarweed (TRLA4)	---
			Popcornflower (PLAGI)	---
			Wild oat (AVFA)	---
Earlal----------	Blue oak (QUDO)	---	California laurel (UMCA)	---
	Foothill pine (PISA2)	---	Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Foothill pine (PISA2)	---
			Toyon (HEAR5)	---
			Whiteleaf manzanita (ARMA)	---
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
685:				
Bosquejo taxadjunct	---	---	Medusahead (TACA8)	---
			Vinegarweed (TRLA4)	---
			Ryegrass (LOLIU)	---
			Lupine (LUPIN)	---
			Clover (TRIFO)	---
			Plantain (PLANT)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
686:				
Redsluff taxadjunct	Valley oak (QULO)	---	Yellow starthistle (CESO3)	---
	Blue oak (QUDO)	---		
	Foothill pine (PISA2)	---	Mediterranean barley (HOMUL)	---
	Interior live oak (QUWI2)	---		
	California sycamore (PLRA)	---	Johnsongrass (SOHA)	---
			Hedgehog dogtail (CYEC)	---
			Ryegrass (LOLIU)	---
			Pacific poison oak (TODI)	---
			Soft chess (BRHOH)	---
			Wild oat (AVFA)	---
			Filaree (ERODI)	---
			Red brome (BRRU2)	---
			Medusahead (TACA8)	---
			Himalaya blackberry (RUDI2)	---
			Ripgut brome (BRDI3)	---
			Vetch (VICIA)	---
			Clover (TRIFO)	---
			Valley oak (QULO)	---
			California sycamore (PLRA)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Curly dock (RUCR)	---
			Willow (SALIX)	---
			California laurel (UMCA)	---
			Douglas sagewort (ARDO3)	---
			Barbed goatgrass (AETR)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
687: Xerorthents, shallow--------	---	---	Soft chess (BRHOH)	---
			Yellow starthistle (CESO3)	---
			Wild oat (AVFA)	---
			Hedgehog dogtail (CYEC)	---
			Red brome (BRRU2)	---
			Pacific poison oak (TODI)	---
			Ripgut brome (BRDI3)	---
			Clover (TRIFO)	---
			Hairypink (PEDU2)	---
			Ryegrass (LOLIU)	---
			Brodiaea (BRODI)	---
			Hansen's spikemoss (SEHA2)	---
			Mediterranean barley (HOMUL)	---
			Navarretia (NAVAR)	---
			Filaree (ERODI)	---
			Beggartick (sticktights) (BIFR)	---
			Dandelion (TARAX)	---
			Blue oak (QUDO)	---
			Foothill pine (PISA2)	---
			Interior live oak (QUWI2)	---
			Buckbrush (CECU)	---
			Toyon (HEAR5)	---
			Manzanita (ARCTO3)	---
			California buckeye (AECA)	---
			Scrub oak (QUBE5)	---
Typic Haploxeralfs---	Blue oak (QUDO)	---	Blue oak (QUDO)	---
	Interior live oak (QUWI2)	---	Interior live oak (QUWI2)	---
	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Foothill pine (PISA2)	---	Foothill pine (PISA2)	---
			Hedgehog dogtail (CYEC)	---
			Pacific poison oak (TODI)	---
			Manzanita (ARCTO3)	---
			Buckbrush (CECU)	---
			Filaree (ERODI)	---
			Soft chess (BRHOH)	---
			Ryegrass (LOLIU)	---
			Wild oat (AVFA)	---
			Brodiaea (BRODI)	---
			Red brome (BRRU2)	---
			Mediterranean barley (HOMUL)	---
			Medusahead (TACA8)	---
			California buckeye (AECA)	---
			Ripgut brome (BRDI3)	---
			Yellow starthistle (CESO3)	---
			Clover (TRIFO)	---
			Hairypink (PEDU2)	---
			Mouse barley (HOMAG)	---
			Toyon (HEAR5)	---
			Yerba santa (ERIOD)	---
			California buckthorn (FRCAT2)	---
			Miners lettuce (CLPE)	---
			Navarretia (NAVAR)	---
			California redbud (CEOR9)	---
			Scrub oak (QUBE5)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
700:				
Retsongulch-----	Douglas-fir (PSME)	27	Tanoak (LIDE3)	40
	Tanoak (LIDE3)	25	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	15	Douglas-fir (PSME)	5
	Ponderosa pine (PIPO)	15	Canyon live oak (QUCH2)	5
	California black oak (QUKE)	5	Whiteleaf manzanita (ARMA)	5
	Sugar pine (PILA)	5	Deerbrush (CEIN3)	1
	Incense cedar (CADE27)	5	Pacific dogwood (CONU4)	1
	White fir (ABCO)	3	California black oak (QUKE)	1
			White fir (ABCO)	1
Flumewall-------	Douglas-fir (PSME)	42	Tanoak (LIDE3)	25
	Ponderosa pine (PIPO)	22	White fir (ABCO)	5
	Tanoak (LIDE3)	10	Incense cedar (CADE27)	5
	California black oak (QUKE)	8	Douglas-fir (PSME)	5
	Incense cedar (CADE27)	7	Whiteleaf manzanita (ARMA)	3
	Sugar pine (PILA)	5	California black oak (QUKE)	3
	Canyon live oak (QUCH2)	5		
	White fir (ABCO)	1	California honeysuckle (LOHI2)	3
			Deerbrush (CEIN3)	1
			Pacific dogwood (CONU4)	1
701:				
Powellton-------	Ponderosa pine (PIPO)	38	Tanoak (LIDE3)	33
	Douglas-fir (PSME)	23	White fir (ABCO)	5
	Sugar pine (PILA)	13	Incense cedar (CADE27)	3
	Incense cedar (CADE27)	11	Pacific dogwood (CONU4)	2
	White fir (ABCO)	6	Western brackenfern (PTAQ)	2
	Tanoak (LIDE3)	5		
	California black oak (QUKE)	2	Douglas-fir (PSME)	2
	Pacific madrone (ARME)	2	Orcutt brome (BROR2)	2
			California honeysuckle (LOHI2)	2
			Deerbrush (CEIN3)	1
Obstruction-----	White fir (ABCO)	26	White fir (ABCO)	9
	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	18	Incense cedar (CADE27)	7
	Sugar pine (PILA)	17	Whitevein shinleaf (PYPI2)	4
	Incense cedar (CADE27)	8	Pacific dogwood (CONU4)	3
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	3
	Tanoak (LIDE3)	2		
			Whitethorn ceanothus (CECO)	3
			Sugar pine (PILA)	2
			Douglas-fir (PSME)	2
			California black oak (QUKE)	2
			Bigleaf maple (ACMA3)	2
			Sierra chinquapin (CHSE11)	2
			California hazel (COCOC)	1
			Broadleaf starflower (TRBOL)	1
			Greenleaf manzanita (ARPA6)	1
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
702:				
Cerpone---------	Jeffrey pine (PIJE)	25	Whiteleaf manzanita (ARMA)	15
	Incense cedar (CADE27)	22		
	Ponderosa pine (PIPO)	20	Buckbrush (CECU)	10
	Douglas-fir (PSME)	15	California laurel (UMCA)	10
	Foothill pine (PISA2)	12	California buckthorn (FRCAT2)	8
	Sugar pine (PILA)	5		
	California black oak (QUKE)	1	Incense cedar (CADE27)	5
			Orcutt brome (BROR2)	3
			Bottlebrush squirreltail (ELEL5)	3
			Toyon (HEAR5)	3
			Jeffrey pine (PIJE)	3
			Foothill pine (PISA2)	3
			Douglas-fir (PSME)	1
Typic Haploxeralfs, magnesic-------	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---		
	Incense cedar (CADE27)	---	Whitethorn ceanothus (CECO)	---
			Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Pacific poison oak (TODI)	---
			California buckthorn (FRCAT2)	---
			Toyon (HEAR5)	---
			Scrub oak (QUBE5)	---
			Jeffrey pine (PIJE)	---
			California black oak (QUKE)	---
			Douglas-fir (PSME)	---
			Incense cedar (CADE27)	---
			Ponderosa pine (PIPO)	---
			Bigleaf maple (ACMA3)	---
Earlal----------	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---		
	Ponderosa pine (PIPO)	---	Buckbrush (CECU)	---
	Incense cedar (CADE27)	---	California laurel (UMCA)	---
	Douglas-fir (PSME)	---	Canyon live oak (QUCH2)	---
	Canyon live oak (QUCH2)	---	California buckthorn (FRCAT2)	---
			Foothill pine (PISA2)	---
			Incense cedar (CADE27)	---
			Jeffrey pine (PIJE)	---
			Ponderosa pine (PIPO)	---
			Douglas-fir (PSME)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
703:				
Cerpone	Jeffrey pine (PIJE)	25	Whiteleaf manzanita (ARMA)	15
	Incense cedar (CADE27)	22	Buckbrush (CECU)	10
	Ponderosa pine (PIPO)	20	California laurel (UMCA)	10
	Douglas-fir (PSME)	15	California buckthorn (FRCAT2)	8
	Foothill pine (PISA2)	12	Incense cedar (CADE27)	5
	Sugar pine (PILA)	5	Orcutt brome (BROR2)	3
	California black oak (QUKE)	1	Bottlebrush squirreltail (ELEL5)	3
			Toyon (HEAR5)	3
			Jeffrey pine (PIJE)	3
			Foothill pine (PISA2)	3
			Douglas-fir (PSME)	1
Typic Haploxeralfs, magnesic	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---	Whitethorn ceanothus (CECO)	---
	Incense cedar (CADE27)	---	Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Pacific poison oak (TODI)	---
			California buckthorn (FRCAT2)	---
			Toyon (HEAR5)	---
			Scrub oak (QUBE5)	---
			Jeffrey pine (PIJE)	---
			California black oak (QUKE)	---
			Douglas-fir (PSME)	---
			Incense cedar (CADE27)	---
			Ponderosa pine (PIPO)	---
			Bigleaf maple (ACMA3)	---
Earlal	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---	Buckbrush (CECU)	---
	Ponderosa pine (PIPO)	---	California laurel (UMCA)	---
	Incense cedar (CADE27)	---	Canyon live oak (QUCH2)	---
	Douglas-fir (PSME)	---	California buckthorn (FRCAT2)	---
	Canyon live oak (QUCH2)	---	Foothill pine (PISA2)	---
			Incense cedar (CADE27)	---
			Jeffrey pine (PIJE)	---
			Ponderosa pine (PIPO)	---
			Douglas-fir (PSME)	---
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
704:				
Typic Haploxeralfs,				
magnesic-------	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---		
	Incense cedar (CADE27)	---	Whitethorn ceanothus (CECO)	---
			Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Pacific poison oak (TODI)	---
			California buckthorn (FRCAT2)	---
			Toyon (HEAR5)	---
			Scrub oak (QUBE5)	---
			Jeffrey pine (PIJE)	---
			California black oak (QUKE)	---
			Douglas-fir (PSME)	---
			Incense cedar (CADE27)	---
			Ponderosa pine (PIPO)	---
			Bigleaf maple (ACMA3)	---
Earlal----------	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---		
	Ponderosa pine (PIPO)	---	Buckbrush (CECU)	---
	Incense cedar (CADE27)	---	California laurel (UMCA)	---
	Douglas-fir (PSME)	---	Canyon live oak (QUCH2)	---
	Canyon live oak (QUCH2)	---	California buckthorn (FRCAT2)	---
			Foothill pine (PISA2)	---
			Incense cedar (CADE27)	---
			Jeffrey pine (PIJE)	---
			Ponderosa pine (PIPO)	---
			Douglas-fir (PSME)	---
Cerpone---------	Jeffrey pine (PIJE)	25	Whiteleaf manzanita (ARMA)	15
	Incense cedar (CADE27)	22		
	Ponderosa pine (PIPO)	20	Buckbrush (CECU)	10
	Douglas-fir (PSME)	15	California laurel (UMCA)	10
	Foothill pine (PISA2)	12	California buckthorn (FRCAT2)	8
	Sugar pine (PILA)	5		
	California black oak (QUKE)	1	Incense cedar (CADE27)	5
			Orcutt brome (BROR2)	3
			Bottlebrush squirreltail (ELEL5)	3
			Toyon (HEAR5)	3
			Jeffrey pine (PIJE)	3
			Foothill pine (PISA2)	3
			Douglas-fir (PSME)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
705:				
Typic Haploxeralfs, magnesic	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---		
	Incense cedar (CADE27)	---	Whitethorn ceanothus (CECO)	---
			Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			Pacific poison oak (TODI)	---
			California buckthorn (FRCAT2)	---
			Toyon (HEAR5)	---
			Scrub oak (QUBE5)	---
			Jeffrey pine (PIJE)	---
			California black oak (QUKE)	---
			Douglas-fir (PSME)	---
			Incense cedar (CADE27)	---
			Ponderosa pine (PIPO)	---
			Bigleaf maple (ACMA3)	---
Earlal	Foothill pine (PISA2)	---	Whiteleaf manzanita (ARMA)	---
	Jeffrey pine (PIJE)	---		
	Ponderosa pine (PIPO)	---	Buckbrush (CECU)	---
	Incense cedar (CADE27)	---	California laurel (UMCA)	---
	Douglas-fir (PSME)	---	Canyon live oak (QUCH2)	---
	Canyon live oak (QUCH2)	---	California buckthorn (FRCAT2)	---
			Foothill pine (PISA2)	---
			Incense cedar (CADE27)	---
			Jeffrey pine (PIJE)	---
			Ponderosa pine (PIPO)	---
			Douglas-fir (PSME)	---
Cerpone	Jeffrey pine (PIJE)	25	Whiteleaf manzanita (ARMA)	15
	Incense cedar (CADE27)	22		
	Ponderosa pine (PIPO)	20	Buckbrush (CECU)	10
	Douglas-fir (PSME)	15	California laurel (UMCA)	10
	Foothill pine (PISA2)	12	California buckthorn (FRCAT2)	8
	Sugar pine (PILA)	5		
	California black oak (QUKE)	1	Incense cedar (CADE27)	5
			Orcutt brome (BROR2)	3
			Bottlebrush squirreltail (ELEL5)	3
			Toyon (HEAR5)	3
			Jeffrey pine (PIJE)	3
			Foothill pine (PISA2)	3
			Douglas-fir (PSME)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
711:				
Dixmine---------	Douglas-fir (PSME)	45	Tanoak (LIDE3)	7
	California black oak (QUKE)	15	Canyon live oak (QUCH2)	7
			Deerbrush (CEIN3)	5
	Sugar pine (PILA)	8	Douglas-fir (PSME)	5
	White fir (ABCO)	8	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	8	Broadleaf starflower (TRBOL)	4
	Ponderosa pine (PIPO)	7		
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	2
	Tanoak (LIDE3)	3	Sugar pine (PILA)	2
			California black oak (QUKE)	2
			White fir (ABCO)	2
			California needlegrass (ACOCC)	2
Toadtown--------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	36
	Sugar pine (PILA)	24	White fir (ABCO)	9
	Douglas-fir (PSME)	19	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	9	Whitevein shinleaf (PYPI2)	5
	White fir (ABCO)	9		
	Incense cedar (CADE27)	7	Pacific dogwood (CONU4)	3
			California black oak (QUKE)	2
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1
712:				
Dixmine---------	Douglas-fir (PSME)	45	Tanoak (LIDE3)	7
	California black oak (QUKE)	15	Canyon live oak (QUCH2)	7
			Deerbrush (CEIN3)	5
	Sugar pine (PILA)	8	Douglas-fir (PSME)	5
	White fir (ABCO)	8	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	8	Broadleaf starflower (TRBOL)	4
	Ponderosa pine (PIPO)	7		
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	2
	Tanoak (LIDE3)	3	Sugar pine (PILA)	2
			California black oak (QUKE)	2
			White fir (ABCO)	2
			California needlegrass (ACOCC)	2
Toadtown--------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	36
	Sugar pine (PILA)	24	White fir (ABCO)	9
	Douglas-fir (PSME)	19	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	9	Whitevein shinleaf (PYPI2)	5
	White fir (ABCO)	9		
	Incense cedar (CADE27)	7	Pacific dogwood (CONU4)	3
			California black oak (QUKE)	2
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
713:				
Dixmine---------	Douglas-fir (PSME)	45	Tanoak (LIDE3)	7
	California black oak (QUKE)	15	Canyon live oak (QUCH2)	7
			Deerbrush (CEIN3)	5
	Sugar pine (PILA)	8	Douglas-fir (PSME)	5
	White fir (ABCO)	8	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	8	Broadleaf starflower (TRBOL)	4
	Ponderosa pine (PIPO)	7		
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	2
	Tanoak (LIDE3)	3	Sugar pine (PILA)	2
			California black oak (QUKE)	2
			White fir (ABCO)	2
			California needlegrass (ACOCC)	2
Toadtown--------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	36
	Sugar pine (PILA)	24	White fir (ABCO)	9
	Douglas-fir (PSME)	19	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	9	Whitevein shinleaf (PYPI2)	5
	White fir (ABCO)	9		
	Incense cedar (CADE27)	7	Pacific dogwood (CONU4)	3
			California black oak (QUKE)	2
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1
714:				
Dixmine---------	Douglas-fir (PSME)	45	Tanoak (LIDE3)	7
	California black oak (QUKE)	15	Canyon live oak (QUCH2)	7
			Deerbrush (CEIN3)	5
	Sugar pine (PILA)	8	Douglas-fir (PSME)	5
	White fir (ABCO)	8	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	8	Broadleaf starflower (TRBOL)	4
	Ponderosa pine (PIPO)	7		
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	2
	Tanoak (LIDE3)	3	Sugar pine (PILA)	2
			California black oak (QUKE)	2
			White fir (ABCO)	2
			California needlegrass (ACOCC)	2
Toadtown--------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	36
	Sugar pine (PILA)	24	White fir (ABCO)	9
	Douglas-fir (PSME)	19	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	9	Whitevein shinleaf (PYPI2)	5
	White fir (ABCO)	9		
	Incense cedar (CADE27)	7	Pacific dogwood (CONU4)	3
			California black oak (QUKE)	2
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
715:				
Logtrain--------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	9
	Douglas-fir (PSME)	18	Canyon live oak (QUCH2)	9
	Sugar pine (PILA)	14	Incense cedar (CADE27)	5
	Incense cedar (CADE27)	10	Douglas-fir (PSME)	4
	White fir (ABCO)	8	Pacific poison oak (TODI)	---
	California black oak (QUKE)	6	Sierra chinquapin (CHSE11)	3
	Canyon live oak (QUCH2)	6	Ponderosa pine (PIPO)	3
	Tanoak (LIDE3)	5	Greenleaf manzanita (ARPA6)	3
	Jeffrey pine (PIJE)	1	Prostrate ceanothus (CEPR)	3
			California black oak (QUKE)	2
			White fir (ABCO)	2
			Pacific dogwood (CONU4)	2
			Deerbrush (CEIN3)	1
			California hazel (COCOC)	1
			Sugar pine (PILA)	1
Bottlehill------	Ponderosa pine (PIPO)	43	Greenleaf manzanita (ARPA6)	15
	Sugar pine (PILA)	18	Prostrate ceanothus (CEPR)	10
	White fir (ABCO)	17	White fir (ABCO)	8
	Douglas-fir (PSME)	13	Sierra chinquapin (CHSE11)	5
	California black oak (QUKE)	9	Incense cedar (CADE27)	2
			Pinemat manzanita (ARNE)	2
			Sugar pine (PILA)	2
			Ponderosa pine (PIPO)	2
			California black oak (QUKE)	2
			Whitevein shinleaf (PYPI2)	1
Walkermine------	Douglas-fir (PSME)	25	Canyon live oak (QUCH2)	18
	Sugar pine (PILA)	15	Sierra chinquapin (CHSE11)	8
	White fir (ABCO)	13	Incense cedar (CADE27)	5
	Ponderosa pine (PIPO)	13	Douglas-fir (PSME)	5
	California black oak (QUKE)	12	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	12	California black oak (QUKE)	3
	Incense cedar (CADE27)	10	White fir (ABCO)	3
			Broadleaf starflower (TRBOL)	3
			Bigleaf maple (ACMA3)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
716:				
Griffgulch------	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16		
	California black oak (QUKE)	12	Pacific madrone (ARME)	6
			Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
Surnuf----------	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17		
			Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4		
	Sugar pine (PILA)	3	Pacific madrone (ARME)	4
	Foothill pine (PISA2)	3	California buckthorn (FRCAT2)	4
			California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
717:				
Griffgulch------	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16		
	California black oak (QUKE)	12	Pacific madrone (ARME)	6
			Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
Surnuf----------	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17		
			Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4		
	Sugar pine (PILA)	3	Pacific madrone (ARME)	4
	Foothill pine (PISA2)	3	California buckthorn (FRCAT2)	4
			California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
718:				
Griffgulch------	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16		
	California black oak (QUKE)	12	Pacific madrone (ARME)	6
			Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
Surnuf----------	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17		
			Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4		
	Sugar pine (PILA)	3	Pacific madrone (ARME)	4
	Foothill pine (PISA2)	3	California buckthorn (FRCAT2)	4
			California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
Spine taxadjunct	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Douglas-fir (PSME)	---	California scrub oak (QUDU)	---
	California black oak (QUKE)	---		
			Interior live oak (QUWI2)	---
	Ponderosa pine (PIPO)	---	California laurel (UMCA)	---
	Incense cedar (CADE27)	---	California black oak (QUKE)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Douglas-fir (PSME)	---
			Toyon (HEAR5)	---
			Ponderosa pine (PIPO)	---
			Foothill pine (PISA2)	---
			Pacific madrone (ARME)	---
			Tanoak (LIDE3)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
719:				
Griffgulch------	Ponderosa pine (PIPO)	55	Whiteleaf manzanita (ARMA)	19
	Douglas-fir (PSME)	16		
	California black oak (QUKE)	12	Pacific madrone (ARME)	6
			Canyon live oak (QUCH2)	5
	Sugar pine (PILA)	8	California laurel (UMCA)	5
	Canyon live oak (QUCH2)	5	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	4	Toyon (HEAR5)	5
			California black oak (QUKE)	5
			Douglas-fir (PSME)	3
			Pursh's buckthorn (FRPU7)	3
			California scrub oak (QUDU)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Ponderosa pine (PIPO)	2
			Lemmon ceanothus (CELE)	1
			California redbud (CEOR9)	1
			Tall Oregon grape (MAAQ2)	1
			Sugar pine (PILA)	1
Surnuf----------	Ponderosa pine (PIPO)	27	Tanoak (LIDE3)	11
	Douglas-fir (PSME)	19	Whiteleaf manzanita (ARMA)	8
	California black oak (QUKE)	17		
			Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	17	Pacific poison oak (TODI)	---
	Pacific madrone (ARME)	6	Toyon (HEAR5)	8
	Tanoak (LIDE3)	4	California honeysuckle (LOHI2)	5
	Incense cedar (CADE27)	4		
	Sugar pine (PILA)	3	Pacific madrone (ARME)	4
	Foothill pine (PISA2)	3	California buckthorn (FRCAT2)	4
			California black oak (QUKE)	4
			Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	2
			Incense cedar (CADE27)	2
			Douglas-fir (PSME)	2
			Ponderosa pine (PIPO)	2
			Sierra gooseberry (RIRO)	2
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
Spine taxadjunct	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Douglas-fir (PSME)	---	California scrub oak (QUDU)	---
	California black oak (QUKE)	---		
			Interior live oak (QUWI2)	---
	Ponderosa pine (PIPO)	---	California laurel (UMCA)	---
	Incense cedar (CADE27)	---	California black oak (QUKE)	---
			Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Douglas-fir (PSME)	---
			Toyon (HEAR5)	---
			Ponderosa pine (PIPO)	---
			Foothill pine (PISA2)	---
			Pacific madrone (ARME)	---
			Tanoak (LIDE3)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
720:				
Dystroxerepts---	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	California scrub oak (QUDU)	---
	Foothill pine (PISA2)	---		
	California black oak (QUKE)	---	Interior live oak (QUWI2)	---
			California laurel (UMCA)	---
	Douglas-fir (PSME)	---	California black oak (QUKE)	---
	Ponderosa pine (PIPO)	---		
	Blue oak (QUDO)	---	Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Douglas-fir (PSME)	---
			Toyon (HEAR5)	---
			Ponderosa pine (PIPO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Pacific madrone (ARME)	---
			Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Tanoak (LIDE3)	---
Haploxeralfs----	Canyon live oak (QUCH2)	---	Canyon live oak (QUCH2)	---
	Interior live oak (QUWI2)	---	California scrub oak (QUDU)	---
	Foothill pine (PISA2)	---		
	California black oak (QUKE)	---	Interior live oak (QUWI2)	---
			California laurel (UMCA)	---
	Douglas-fir (PSME)	---	California black oak (QUKE)	---
	Ponderosa pine (PIPO)	---		
	Blue oak (QUDO)	---	Pacific poison oak (TODI)	---
			Whiteleaf manzanita (ARMA)	---
			Douglas-fir (PSME)	---
			Toyon (HEAR5)	---
			Ponderosa pine (PIPO)	---
			Foothill pine (PISA2)	---
			Buckbrush (CECU)	---
			Pacific madrone (ARME)	---
			Blue oak (QUDO)	---
			Buckbrush (CECU)	---
			Tanoak (LIDE3)	---
Rock outcrop.				
721:				
Haploxerands, granitic till--	White fir (ABCO)	36	White fir (ABCO)	18
	Ponderosa pine (PIPO)	25	Sierra chinquapin (CHSE11)	10
	Sugar pine (PILA)	17		
	Incense cedar (CADE27)	8	Incense cedar (CADE27)	8
	California red fir (ABMA)	7	Greenleaf manzanita (ARPA6)	7
	California black oak (QUKE)	5	Whitethorn ceanothus (CECO)	4
	Douglas-fir (PSME)	2		
			Pipsissewa (CHUM)	1
			Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Bitter cherry (PREM)	1
			California black oak (QUKE)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
722: Haploxerands, granitic till--	White fir (ABCO)	36	White fir (ABCO)	18
	Ponderosa pine (PIPO)	25	Sierra chinquapin (CHSE11)	10
	Sugar pine (PILA)	17	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	8	Greenleaf manzanita (ARPA6)	7
	California red fir (ABMA)	7	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	5	Pipsissewa (CHUM)	1
	Douglas-fir (PSME)	2	Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Bitter cherry (PREM)	1
			California black oak (QUKE)	1
			Sierra gooseberry (RIRO)	1
723: Haploxerands, granitic till--	White fir (ABCO)	36	White fir (ABCO)	18
	Ponderosa pine (PIPO)	25	Sierra chinquapin (CHSE11)	10
	Sugar pine (PILA)	17	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	8	Greenleaf manzanita (ARPA6)	7
	California red fir (ABMA)	7	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	5	Pipsissewa (CHUM)	1
	Douglas-fir (PSME)	2	Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Bitter cherry (PREM)	1
			California black oak (QUKE)	1
			Sierra gooseberry (RIRO)	1
724: Haploxerands, volcanic till--	White fir (ABCO)	36	White fir (ABCO)	18
	Ponderosa pine (PIPO)	25	Sierra chinquapin (CHSE11)	10
	Sugar pine (PILA)	17	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	8	Greenleaf manzanita (ARPA6)	7
	California red fir (ABMA)	7	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	5	Pipsissewa (CHUM)	1
	Douglas-fir (PSME)	2	Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Bitter cherry (PREM)	1
			California black oak (QUKE)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
725: Haploxerands, volcanic till--	White fir (ABCO)	36	White fir (ABCO)	18
	Ponderosa pine (PIPO)	25	Sierra chinquapin (CHSE11)	10
	Sugar pine (PILA)	17	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	8	Greenleaf manzanita (ARPA6)	7
	California red fir (ABMA)	7	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	5	Pipsissewa (CHUM)	1
	Douglas-fir (PSME)	2	Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Bitter cherry (PREM)	1
			California black oak (QUKE)	1
			Sierra gooseberry (RIRO)	1
726: Haploxerands, volcanic till--	White fir (ABCO)	36	White fir (ABCO)	18
	Ponderosa pine (PIPO)	25	Sierra chinquapin (CHSE11)	10
	Sugar pine (PILA)	17	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	8	Greenleaf manzanita (ARPA6)	7
	California red fir (ABMA)	7	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	5	Pipsissewa (CHUM)	1
	Douglas-fir (PSME)	2	Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Bitter cherry (PREM)	1
			California black oak (QUKE)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
727:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
728:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
729:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
730:				
Tusccoll--------	Douglas-fir (PSME)	45	Douglas-fir (PSME)	15
	Incense cedar (CADE27)	15	California honeysuckle (LOHI2)	7
	Ponderosa pine (PIPO)	15		
	California black oak (QUKE)	13	Canyon live oak (QUCH2)	7
			California torreya (TOCA)	5
	Canyon live oak (QUCH2)	7	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	5	California black oak (QUKE)	4
			California laurel (UMCA)	4
			Incense cedar (CADE27)	3
			Whitethorn ceanothus (CECO)	2
			California honeysuckle (LOHI2)	
			Pacific dogwood (CONU4)	1
			Bigleaf maple (ACMA3)	1
			Deerbrush (CEIN3)	1
			Western brackenfern (PTAQ)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
Schott----------	Ponderosa pine (PIPO)	50	Whiteleaf manzanita (ARMA)	20
	Douglas-fir (PSME)	25		
	Incense cedar (CADE27)	8	California buckthorn (FRCAT2)	10
	Canyon live oak (QUCH2)	7		
	California black oak (QUKE)	7	Incense cedar (CADE27)	8
			Pacific poison oak (TODI)	---
	Sugar pine (PILA)	3	Greenleaf manzanita (ARPA6)	8
			Douglas-fir (PSME)	5
			Canyon live oak (QUCH2)	5
			Lemmon ceanothus (CELE)	3
			California black oak (QUKE)	3
			Deerbrush (CEIN3)	3
			Western brackenfern (PTAQ)	3
			California laurel (UMCA)	3
			Ponderosa pine (PIPO)	1
			California torreya (TOCA)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
731:				
Tusccoll--------	Douglas-fir (PSME)	45	Douglas-fir (PSME)	15
	Incense cedar (CADE27)	15	California honeysuckle (LOHI2)	7
	Ponderosa pine (PIPO)	15		
	California black oak (QUKE)	13	Canyon live oak (QUCH2)	7
			California torreya (TOCA)	5
	Canyon live oak (QUCH2)	7	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	5	California black oak (QUKE)	4
			California laurel (UMCA)	4
			Incense cedar (CADE27)	3
			Whitethorn ceanothus (CECO)	2
			California honeysuckle (LOHI2)	2
			Pacific dogwood (CONU4)	1
			Bigleaf maple (ACMA3)	1
			Deerbrush (CEIN3)	1
			Western brackenfern (PTAQ)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
Schott----------	Ponderosa pine (PIPO)	50	Whiteleaf manzanita (ARMA)	20
	Douglas-fir (PSME)	25		
	Incense cedar (CADE27)	8	California buckthorn (FRCAT2)	10
	Canyon live oak (QUCH2)	7		
	California black oak (QUKE)	7	Incense cedar (CADE27)	8
			Pacific poison oak (TODI)	---
	Sugar pine (PILA)	3	Greenleaf manzanita (ARPA6)	8
			Douglas-fir (PSME)	5
			Canyon live oak (QUCH2)	5
			Lemmon ceanothus (CELE)	3
			California black oak (QUKE)	3
			Deerbrush (CEIN3)	3
			Western brackenfern (PTAQ)	3
			California laurel (UMCA)	3
			Ponderosa pine (PIPO)	1
			California torreya (TOCA)	1
732:				
Bonepile taxadjunct-----	Ponderosa pine (PIPO)	37	White fir (ABCO)	10
	Incense cedar (CADE27)	25	Incense cedar (CADE27)	10
	Douglas-fir (PSME)	15	Greenleaf manzanita (ARPA6)	8
	White fir (ABCO)	13		
	Sugar pine (PILA)	5	Prostrate ceanothus (CEPR)	3
	California black oak (QUKE)	5	Bottlebrush squirreltail (ELEL5)	3
			Douglas-fir (PSME)	3
			Ponderosa pine (PIPO)	3
			California black oak (QUKE)	3
			California needlegrass (ACOCC)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra gooseberry (RIRO)	1
			Common snowberry (SYAL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
733:				
Haploxeralfs, terrace	Blue oak (QUDO)	---	Yellow starthistle (CESO3)	---
	Interior live oak (QUWI2)	---	Soft chess (BRHOH)	---
	Canyon live oak (QUCH2)	---	Hedgehog dogtail (CYEC)	---
	Valley oak (QULO)	---	Ripgut brome (BRDI3)	---
			Mediterranean barley (HOMUL)	---
			Blue oak (QUDO)	---
			Interior live oak (QUWI2)	---
			Canyon live oak (QUCH2)	---
			Valley oak (QULO)	---
			Foothill pine (PISA2)	---
734:				
Haploxerands	White fir (ABCO)	40	White fir (ABCO)	10
	Sugar pine (PILA)	22	Incense cedar (CADE27)	10
	California red fir (ABMA)	17	Sierra chinquapin (CHSE11)	5
	Ponderosa pine (PIPO)	10	Western brackenfern (PTAQ)	5
	Incense cedar (CADE27)	8	California red fir (ABMA)	3
	California black oak (QUKE)	3	Huckleberry oak (QUVA)	3
			Pipsissewa (CHUM)	1
			Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
Aquic Xerofluvents	---	---	Carex (CAREX)	---
			Rush (JUNCU)	---
			Willow (SALIX)	---
			California false hellebore (VECAC2)	---
735:				
Fluvaquents, loamy	Ponderosa pine (PIPO)	---	Ponderosa pine (PIPO)	---
	California black oak (QUKE)	---	White alder (ALRH2)	---
			Bigleaf maple (ACMA3)	---
			Willow (SALIX)	---
			Himalaya blackberry (RUDI2)	---
			California black oak (QUKE)	---
			Thistle (CIRSI)	---
			Carex (CAREX)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
801:				
Obstruction-----	White fir (ABCO)	26	White fir (ABCO)	9
	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	18	Incense cedar (CADE27)	7
	Sugar pine (PILA)	17	Whitevein shinleaf (PYPI2)	4
	Incense cedar (CADE27)	8	Pacific dogwood (CONU4)	3
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	3
	Tanoak (LIDE3)	2	Whitethorn ceanothus (CECO)	3
			Sugar pine (PILA)	2
			Douglas-fir (PSME)	2
			California black oak (QUKE)	2
			Bigleaf maple (ACMA3)	2
			Sierra chinquapin (CHSE11)	2
			California hazel (COCOC)	1
			Broadleaf starflower (TRBOL)	1
			Greenleaf manzanita (ARPA6)	1
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
802:				
Obskel----------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	11
	White fir (ABCO)	18	Incense cedar (CADE27)	10
	Douglas-fir (PSME)	17	Broadleaf starflower (TRBOL)	7
	Incense cedar (CADE27)	15	White fir (ABCO)	5
	Sugar pine (PILA)	10	Pacific dogwood (CONU4)	5
	California black oak (QUKE)	5	Western brackenfern (PTAQ)	5
	Tanoak (LIDE3)	3	California hazel (COCOC)	4
			Douglas-fir (PSME)	2
			California black oak (QUKE)	1
			Sierra chinquapin (CHSE11)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
802:				
Obstruction-----	White fir (ABCO)	26	White fir (ABCO)	9
	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	18	Incense cedar (CADE27)	7
	Sugar pine (PILA)	17	Whitevein shinleaf (PYPI2)	4
	Incense cedar (CADE27)	8	Pacific dogwood (CONU4)	3
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	3
	Tanoak (LIDE3)	2	Whitethorn ceanothus (CECO)	3
			Sugar pine (PILA)	2
			Douglas-fir (PSME)	2
			California black oak (QUKE)	2
			Bigleaf maple (ACMA3)	2
			Sierra chinquapin (CHSE11)	2
			California hazel (COCOC)	1
			Broadleaf starflower (TRBOL)	1
			Greenleaf manzanita (ARPA6)	1
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
803:				
Obskel----------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	11
	White fir (ABCO)	18	Incense cedar (CADE27)	10
	Douglas-fir (PSME)	17	Broadleaf starflower (TRBOL)	7
	Incense cedar (CADE27)	15	White fir (ABCO)	5
	Sugar pine (PILA)	10	Pacific dogwood (CONU4)	5
	California black oak (QUKE)	5	Western brackenfern (PTAQ)	5
	Tanoak (LIDE3)	3	California hazel (COCOC)	4
			Douglas-fir (PSME)	2
			California black oak (QUKE)	1
			Sierra chinquapin (CHSE11)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
803:				
Obstruction-----	White fir (ABCO)	26	White fir (ABCO)	9
	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	18	Incense cedar (CADE27)	7
	Sugar pine (PILA)	17	Whitevein shinleaf (PYPI2)	4
	Incense cedar (CADE27)	8	Pacific dogwood (CONU4)	3
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	3
	Tanoak (LIDE3)	2	Whitethorn ceanothus (CECO)	3
			Sugar pine (PILA)	2
			Douglas-fir (PSME)	2
			California black oak (QUKE)	2
			Bigleaf maple (ACMA3)	2
			Sierra chinquapin (CHSE11)	2
			California hazel (COCOC)	1
			Broadleaf starflower (TRBOL)	1
			Greenleaf manzanita (ARPA6)	1
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
804:				
Obskel----------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	11
	White fir (ABCO)	18	Incense cedar (CADE27)	10
	Douglas-fir (PSME)	17	Broadleaf starflower (TRBOL)	7
	Incense cedar (CADE27)	15	White fir (ABCO)	5
	Sugar pine (PILA)	10	Pacific dogwood (CONU4)	5
	California black oak (QUKE)	5	Western brackenfern (PTAQ)	5
	Tanoak (LIDE3)	3	California hazel (COCOC)	4
			Douglas-fir (PSME)	2
			California black oak (QUKE)	1
			Sierra chinquapin (CHSE11)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
804:				
Obstruction-----	White fir (ABCO)	26	White fir (ABCO)	9
	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	18	Incense cedar (CADE27)	7
	Sugar pine (PILA)	17	Whitevein shinleaf (PYPI2)	4
	Incense cedar (CADE27)	8	Pacific dogwood (CONU4)	3
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	3
	Tanoak (LIDE3)	2	Whitethorn ceanothus (CECO)	3
			Sugar pine (PILA)	2
			Douglas-fir (PSME)	2
			California black oak (QUKE)	2
			Bigleaf maple (ACMA3)	2
			Sierra chinquapin (CHSE11)	2
			California hazel (COCOC)	1
			Broadleaf starflower (TRBOL)	1
			Greenleaf manzanita (ARPA6)	1
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
Retsongulch-----	Douglas-fir (PSME)	27	Tanoak (LIDE3)	40
	Tanoak (LIDE3)	25	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	15	Douglas-fir (PSME)	5
	Ponderosa pine (PIPO)	15	Canyon live oak (QUCH2)	5
	California black oak (QUKE)	5	Whiteleaf manzanita (ARMA)	5
	Sugar pine (PILA)	5	Deerbrush (CEIN3)	1
	Incense cedar (CADE27)	5	Pacific dogwood (CONU4)	1
	White fir (ABCO)	3	California black oak (QUKE)	1
			White fir (ABCO)	1
805:				
Bottlehill------	Ponderosa pine (PIPO)	43	Greenleaf manzanita (ARPA6)	15
	Sugar pine (PILA)	18		
	White fir (ABCO)	17	Prostrate ceanothus (CEPR)	10
	Douglas-fir (PSME)	13		
	California black oak (QUKE)	9	White fir (ABCO)	8
			Sierra chinquapin (CHSE11)	5
			Incense cedar (CADE27)	2
			Pinemat manzanita (ARNE)	2
			Sugar pine (PILA)	2
			Ponderosa pine (PIPO)	2
			California black oak (QUKE)	2
			Whitevein shinleaf (PYPI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
805:				
Walkermine------	Douglas-fir (PSME)	25	Canyon live oak (QUCH2)	18
	Sugar pine (PILA)	15	Sierra chinquapin (CHSE11)	8
	White fir (ABCO)	13		
	Ponderosa pine (PIPO)	13	Incense cedar (CADE27)	5
	California black oak (QUKE)	12	Douglas-fir (PSME)	5
			Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	12	California black oak (QUKE)	3
	Incense cedar (CADE27)	10		
			White fir (ABCO)	3
			Broadleaf starflower (TRBOL)	3
			Bigleaf maple (ACMA3)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
			Ponderosa pine (PIPO)	1
Logtrain--------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	9
	Douglas-fir (PSME)	18	Canyon live oak (QUCH2)	9
	Sugar pine (PILA)	14	Incense cedar (CADE27)	5
	Incense cedar (CADE27)	10	Douglas-fir (PSME)	4
	White fir (ABCO)	8	Pacific poison oak (TODI)	---
	California black oak (QUKE)	6	Sierra chinquapin (CHSE11)	3
	Canyon live oak (QUCH2)	6	Ponderosa pine (PIPO)	3
	Tanoak (LIDE3)	5	Greenleaf manzanita (ARPA6)	3
	Jeffrey pine (PIJE)	1		
			Prostrate ceanothus (CEPR)	3
			California black oak (QUKE)	2
			White fir (ABCO)	2
			Pacific dogwood (CONU4)	2
			Deerbrush (CEIN3)	1
			California hazel (COCOC)	1
			Sugar pine (PILA)	1
806:				
Bottlehill------	Ponderosa pine (PIPO)	43	Greenleaf manzanita (ARPA6)	15
	Sugar pine (PILA)	18		
	White fir (ABCO)	17	Prostrate ceanothus (CEPR)	10
	Douglas-fir (PSME)	13		
	California black oak (QUKE)	9	White fir (ABCO)	8
			Sierra chinquapin (CHSE11)	5
			Incense cedar (CADE27)	2
			Pinemat manzanita (ARNE)	2
			Sugar pine (PILA)	2
			Ponderosa pine (PIPO)	2
			California black oak (QUKE)	2
			Whitevein shinleaf (PYPI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
806:				
Walkermine------	Douglas-fir (PSME)	25	Canyon live oak (QUCH2)	18
	Sugar pine (PILA)	15	Sierra chinquapin (CHSE11)	8
	White fir (ABCO)	13		
	Ponderosa pine (PIPO)	13	Incense cedar (CADE27)	5
	California black oak (QUKE)	12	Douglas-fir (PSME)	5
			Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	12	California black oak (QUKE)	3
	Incense cedar (CADE27)	10		
			White fir (ABCO)	3
			Broadleaf starflower (TRBOL)	3
			Bigleaf maple (ACMA3)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
			Ponderosa pine (PIPO)	1
Logtrain--------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	9
	Douglas-fir (PSME)	18	Canyon live oak (QUCH2)	9
	Sugar pine (PILA)	14	Incense cedar (CADE27)	5
	Incense cedar (CADE27)	10	Douglas-fir (PSME)	4
	White fir (ABCO)	8	Pacific poison oak (TODI)	---
	California black oak (QUKE)	6	Sierra chinquapin (CHSE11)	3
	Canyon live oak (QUCH2)	6	Ponderosa pine (PIPO)	3
	Tanoak (LIDE3)	5	Greenleaf manzanita (ARPA6)	3
	Jeffrey pine (PIJE)	1		
			Prostrate ceanothus (CEPR)	3
			California black oak (QUKE)	2
			White fir (ABCO)	2
			Pacific dogwood (CONU4)	2
			Deerbrush (CEIN3)	1
			California hazel (COCOC)	1
			Sugar pine (PILA)	1
807:				
Bottlehill------	Ponderosa pine (PIPO)	43	Greenleaf manzanita (ARPA6)	15
	Sugar pine (PILA)	18		
	White fir (ABCO)	17	Prostrate ceanothus (CEPR)	10
	Douglas-fir (PSME)	13		
	California black oak (QUKE)	9	White fir (ABCO)	8
			Sierra chinquapin (CHSE11)	5
			Incense cedar (CADE27)	2
			Pinemat manzanita (ARNE)	2
			Sugar pine (PILA)	2
			Ponderosa pine (PIPO)	2
			California black oak (QUKE)	2
			Whitevein shinleaf (PYPI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
807:				
Logtrain--------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	9
	Douglas-fir (PSME)	18	Canyon live oak (QUCH2)	9
	Sugar pine (PILA)	14	Incense cedar (CADE27)	5
	Incense cedar (CADE27)	10	Douglas-fir (PSME)	4
	White fir (ABCO)	8	Sierra chinquapin (CHSE11)	3
	California black oak (QUKE)	6	Ponderosa pine (PIPO)	3
	Canyon live oak (QUCH2)	6	Greenleaf manzanita (ARPA6)	3
	Tanoak (LIDE3)	5	Prostrate ceanothus (CEPR)	3
	Jeffrey pine (PIJE)	1	California black oak (QUKE)	2
			White fir (ABCO)	2
			Pacific dogwood (CONU4)	2
			Deerbrush (CEIN3)	1
			California hazel (COCOC)	1
			Sugar pine (PILA)	1
Walkermine------	Douglas-fir (PSME)	25	Canyon live oak (QUCH2)	18
	Sugar pine (PILA)	15	Sierra chinquapin (CHSE11)	8
	White fir (ABCO)	13	Incense cedar (CADE27)	5
	Ponderosa pine (PIPO)	13	Douglas-fir (PSME)	5
	California black oak (QUKE)	12	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	12	California black oak (QUKE)	3
	Incense cedar (CADE27)	10	White fir (ABCO)	3
			Broadleaf starflower (TRBOL)	3
			Bigleaf maple (ACMA3)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
			Ponderosa pine (PIPO)	1
808:				
Bottlehill------	Ponderosa pine (PIPO)	43	Greenleaf manzanita (ARPA6)	15
	Sugar pine (PILA)	18	Prostrate ceanothus (CEPR)	10
	White fir (ABCO)	17	White fir (ABCO)	8
	Douglas-fir (PSME)	13	Sierra chinquapin (CHSE11)	5
	California black oak (QUKE)	9	Incense cedar (CADE27)	2
			Pinemat manzanita (ARNE)	2
			Sugar pine (PILA)	2
			Ponderosa pine (PIPO)	2
			California black oak (QUKE)	2
			Whitevein shinleaf (PYPI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
808:				
Walkermine------	Douglas-fir (PSME)	25	Canyon live oak (QUCH2)	18
	Sugar pine (PILA)	15	Sierra chinquapin (CHSE11)	8
	White fir (ABCO)	13		
	Ponderosa pine (PIPO)	13	Incense cedar (CADE27)	5
	California black oak (QUKE)	12	Douglas-fir (PSME)	5
			Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	12	California black oak (QUKE)	3
	Incense cedar (CADE27)	10		
			White fir (ABCO)	3
			Broadleaf starflower (TRBOL)	3
			Bigleaf maple (ACMA3)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
			Ponderosa pine (PIPO)	1
Logtrain--------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	9
	Douglas-fir (PSME)	18	Canyon live oak (QUCH2)	9
	Sugar pine (PILA)	14	Incense cedar (CADE27)	5
	Incense cedar (CADE27)	10	Douglas-fir (PSME)	4
	White fir (ABCO)	8	Sierra chinquapin (CHSE11)	3
	California black oak (QUKE)	6	Ponderosa pine (PIPO)	3
	Canyon live oak (QUCH2)	6	Greenleaf manzanita (ARPA6)	3
	Tanoak (LIDE3)	5		
	Jeffrey pine (PIJE)	1	Prostrate ceanothus (CEPR)	3
			California black oak (QUKE)	2
			White fir (ABCO)	2
			Pacific dogwood (CONU4)	2
			Deerbrush (CEIN3)	1
			California hazel (COCOC)	1
			Sugar pine (PILA)	1
809:				
Walkermine------	Douglas-fir (PSME)	25	Canyon live oak (QUCH2)	18
	Sugar pine (PILA)	15	Sierra chinquapin (CHSE11)	8
	White fir (ABCO)	13		
	Ponderosa pine (PIPO)	13	Incense cedar (CADE27)	5
	California black oak (QUKE)	12	Douglas-fir (PSME)	5
			Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	12	California black oak (QUKE)	3
	Incense cedar (CADE27)	10		
			White fir (ABCO)	3
			Broadleaf starflower (TRBOL)	3
			Bigleaf maple (ACMA3)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
809:				
Bottlehill------	Ponderosa pine (PIPO)	43	Greenleaf manzanita (ARPA6)	15
	Sugar pine (PILA)	18		
	White fir (ABCO)	17	Prostrate ceanothus (CEPR)	10
	Douglas-fir (PSME)	13		
	California black oak (QUKE)	9	White fir (ABCO)	8
			Sierra chinquapin (CHSE11)	5
			Incense cedar (CADE27)	2
			Pinemat manzanita (ARNE)	2
			Sugar pine (PILA)	2
			Ponderosa pine (PIPO)	2
			California black oak (QUKE)	2
			Whitevein shinleaf (PYPI2)	1
Logtrain--------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	9
	Douglas-fir (PSME)	18	Canyon live oak (QUCH2)	9
	Sugar pine (PILA)	14	Incense cedar (CADE27)	5
	Incense cedar (CADE27)	10	Douglas-fir (PSME)	4
	White fir (ABCO)	8	Pacific poison oak (TODI)	---
	California black oak (QUKE)	6	Sierra chinquapin (CHSE11)	3
	Canyon live oak (QUCH2)	6	Ponderosa pine (PIPO)	3
	Tanoak (LIDE3)	5	Greenleaf manzanita (ARPA6)	3
	Jeffrey pine (PIJE)	1		
			Prostrate ceanothus (CEPR)	3
			California black oak (QUKE)	2
			White fir (ABCO)	2
			Pacific dogwood (CONU4)	2
			Deerbrush (CEIN3)	1
			California hazel (COCOC)	1
			Sugar pine (PILA)	1
Rock outcrop.				
810:				
Dixmine---------	Douglas-fir (PSME)	45	Tanoak (LIDE3)	7
	California black oak (QUKE)	15	Canyon live oak (QUCH2)	7
			Deerbrush (CEIN3)	5
	Sugar pine (PILA)	8	Douglas-fir (PSME)	5
	White fir (ABCO)	8	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	8	Broadleaf starflower (TRBOL)	4
	Ponderosa pine (PIPO)	7		
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	2
	Tanoak (LIDE3)	3	Sugar pine (PILA)	2
			California black oak (QUKE)	2
			White fir (ABCO)	2
			California needlegrass (ACOCC)	2

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
810:				
Mac	Douglas-fir (PSME)	33	Tanoak (LIDE3)	30
	Ponderosa pine (PIPO)	20	Douglas-fir (PSME)	8
	Sugar pine (PILA)	15	Incense cedar (CADE27)	3
	Tanoak (LIDE3)	12	Sugar pine (PILA)	2
	California black oak (QUKE)	10	Pacific poison oak (TODI)	---
			White fir (ABCO)	2
	White fir (ABCO)	7	California black oak (QUKE)	2
	Incense cedar (CADE27)	3	California honeysuckle (LOHI2)	2
Spine	Douglas-fir (PSME)	25	Tanoak (LIDE3)	26
	Sugar pine (PILA)	16	Whiteleaf manzanita (ARMA)	8
	Tanoak (LIDE3)	15		
	Ponderosa pine (PIPO)	13	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	13	Pacific poison oak (TODI)	---
	California black oak (QUKE)	11	Incense cedar (CADE27)	3
			Douglas-fir (PSME)	3
	Incense cedar (CADE27)	5	California black oak (QUKE)	3
	White fir (ABCO)	2		
			Broadleaf starflower (TRBOL)	3
			White fir (ABCO)	1
			Pacific madrone (ARME)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
811:				
Powellton	Ponderosa pine (PIPO)	38	Tanoak (LIDE3)	33
	Douglas-fir (PSME)	23	White fir (ABCO)	5
	Sugar pine (PILA)	13	Incense cedar (CADE27)	3
	Incense cedar (CADE27)	11	Pacific dogwood (CONU4)	2
	White fir (ABCO)	6	Western brackenfern (PTAQ)	2
	Tanoak (LIDE3)	5		
	California black oak (QUKE)	2	Douglas-fir (PSME)	2
			Orcutt brome (BROR2)	2
	Pacific madrone (ARME)	2	California honeysuckle (LOHI2)	2
			Deerbrush (CEIN3)	1
Toadtown	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	36
	Sugar pine (PILA)	24	White fir (ABCO)	9
	Douglas-fir (PSME)	19	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	9	Whitevein shinleaf (PYPI2)	5
	White fir (ABCO)	9		
	Incense cedar (CADE27)	7	Pacific dogwood (CONU4)	3
			California black oak (QUKE)	2
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
812:				
Powellton-------	Ponderosa pine (PIPO)	38	Tanoak (LIDE3)	33
	Douglas-fir (PSME)	23	White fir (ABCO)	5
	Sugar pine (PILA)	13	Incense cedar (CADE27)	3
	Incense cedar (CADE27)	11	Pacific dogwood (CONU4)	2
	White fir (ABCO)	6	Western brackenfern (PTAQ)	2
	Tanoak (LIDE3)	5		
	California black oak (QUKE)	2	Douglas-fir (PSME)	2
			Orcutt brome (BROR2)	2
	Pacific madrone (ARME)	2	California honeysuckle (LOHI2)	2
			Deerbrush (CEIN3)	1
Toadtown--------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	36
	Sugar pine (PILA)	24	White fir (ABCO)	9
	Douglas-fir (PSME)	19	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	9	Whitevein shinleaf (PYPI2)	5
	White fir (ABCO)	9		
	Incense cedar (CADE27)	7	Pacific dogwood (CONU4)	3
			California black oak (QUKE)	2
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1
813:				
Powellton-------	Ponderosa pine (PIPO)	38	Tanoak (LIDE3)	33
	Douglas-fir (PSME)	23	White fir (ABCO)	5
	Sugar pine (PILA)	13	Incense cedar (CADE27)	3
	Incense cedar (CADE27)	11	Pacific dogwood (CONU4)	2
	White fir (ABCO)	6	Western brackenfern (PTAQ)	2
	Tanoak (LIDE3)	5		
	California black oak (QUKE)	2	Douglas-fir (PSME)	2
			Orcutt brome (BROR2)	2
	Pacific madrone (ARME)	2	California honeysuckle (LOHI2)	2
			Deerbrush (CEIN3)	1
Toadtown--------	Ponderosa pine (PIPO)	32	Tanoak (LIDE3)	36
	Sugar pine (PILA)	24	White fir (ABCO)	9
	Douglas-fir (PSME)	19	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	9	Whitevein shinleaf (PYPI2)	5
	White fir (ABCO)	9		
	Incense cedar (CADE27)	7	Pacific dogwood (CONU4)	3
			California black oak (QUKE)	2
			Douglas-fir (PSME)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
814:				
Mountyana-------	Ponderosa pine (PIPO)	23	Tanoak (LIDE3)	15
	Sugar pine (PILA)	21	White fir (ABCO)	10
	White fir (ABCO)	18	Incense cedar (CADE27)	9
	Douglas-fir (PSME)	17	Deerbrush (CEIN3)	6
	Tanoak (LIDE3)	8	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	8	Sugar pine (PILA)	3
	California black oak (QUKE)	5	Ponderosa pine (PIPO)	3
			Western brackenfern (PTAQ)	3
			Pacific dogwood (CONU4)	2
			Prostrate ceanothus (CEPR)	2
			Douglas-fir (PSME)	2
			California black oak (QUKE)	2
			California needlegrass (ACOCC)	2
			Common snowberry (SYAL)	2
			Whitevein shinleaf (PYPI2)	1
			Greenleaf manzanita (ARPA6)	1
			Wax currant (RICE)	1
815:				
Mountyana-------	Ponderosa pine (PIPO)	23	Tanoak (LIDE3)	15
	Sugar pine (PILA)	21	White fir (ABCO)	10
	White fir (ABCO)	18	Incense cedar (CADE27)	9
	Douglas-fir (PSME)	17	Deerbrush (CEIN3)	6
	Tanoak (LIDE3)	8	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	8	Sugar pine (PILA)	3
	California black oak (QUKE)	5	Ponderosa pine (PIPO)	3
			Western brackenfern (PTAQ)	3
			Pacific dogwood (CONU4)	2
			Prostrate ceanothus (CEPR)	2
			Douglas-fir (PSME)	2
			California black oak (QUKE)	2
			California needlegrass (ACOCC)	2
			Common snowberry (SYAL)	2
			Whitevein shinleaf (PYPI2)	1
			Greenleaf manzanita (ARPA6)	1
			Wax currant (RICE)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
817:				
Lydon	California black oak (QUKE)	25	Canyon live oak (QUCH2)	10
	Douglas-fir (PSME)	21	California needlegrass (ACOCC)	8
	Ponderosa pine (PIPO)	20	Carex (CAREX)	7
	Canyon live oak (QUCH2)	13	California black oak (QUKE)	7
	Incense cedar (CADE27)	12	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	5
	White fir (ABCO)	2	California honeysuckle (LOHI2)	5
			Ponderosa pine (PIPO)	4
			Douglas-fir (PSME)	3
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Tanoak (LIDE3)	2
			White fir (ABCO)	2
			Whiteleaf manzanita (ARMA)	2
			Orcutt brome (BROR2)	2
			Deerbrush (CEIN3)	2
818:				
Lydon	California black oak (QUKE)	25	Canyon live oak (QUCH2)	10
	Douglas-fir (PSME)	21	California needlegrass (ACOCC)	8
	Ponderosa pine (PIPO)	20	Carex (CAREX)	7
	Canyon live oak (QUCH2)	13	California black oak (QUKE)	7
	Incense cedar (CADE27)	12	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	5
	White fir (ABCO)	2	California honeysuckle (LOHI2)	5
			Ponderosa pine (PIPO)	4
			Douglas-fir (PSME)	3
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Tanoak (LIDE3)	2
			White fir (ABCO)	2
			Whiteleaf manzanita (ARMA)	2
			Orcutt brome (BROR2)	2
			Deerbrush (CEIN3)	2

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
819:				
Lydon----------	California black oak (QUKE)	25	Canyon live oak (QUCH2)	10
			California needlegrass (ACOCC)	8
	Douglas-fir (PSME)	21		
	Ponderosa pine (PIPO)	20	Carex (CAREX)	7
	Canyon live oak (QUCH2)	13	California black oak (QUKE)	7
	Incense cedar (CADE27)	12		
	Sugar pine (PILA)	7	Pacific poison oak (TODI)	---
	White fir (ABCO)	2	Incense cedar (CADE27)	5
			California honeysuckle (LOHI2)	5
			Ponderosa pine (PIPO)	4
			Douglas-fir (PSME)	3
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Tanoak (LIDE3)	2
			White fir (ABCO)	2
			Whiteleaf manzanita (ARMA)	2
			Orcutt brome (BROR2)	2
			Deerbrush (CEIN3)	2
Rock outcrop.				
820:				
Lydon----------	California black oak (QUKE)	25	Canyon live oak (QUCH2)	10
			California needlegrass (ACOCC)	8
	Douglas-fir (PSME)	21		
	Ponderosa pine (PIPO)	20	Carex (CAREX)	7
	Canyon live oak (QUCH2)	13	California black oak (QUKE)	7
	Incense cedar (CADE27)	12		
	Sugar pine (PILA)	7	Pacific poison oak (TODI)	---
	White fir (ABCO)	2	Incense cedar (CADE27)	5
			California honeysuckle (LOHI2)	5
			Ponderosa pine (PIPO)	4
			Douglas-fir (PSME)	3
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Tanoak (LIDE3)	2
			White fir (ABCO)	2
			Whiteleaf manzanita (ARMA)	2
			Orcutt brome (BROR2)	2
			Deerbrush (CEIN3)	2
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
821:				
Lydon----------	California black oak (QUKE)	25	Canyon live oak (QUCH2)	10
	Douglas-fir (PSME)	21	California needlegrass (ACOCC)	8
	Ponderosa pine (PIPO)	20	Carex (CAREX)	7
	Canyon live oak (QUCH2)	13	California black oak (QUKE)	7
	Incense cedar (CADE27)	12		
	Sugar pine (PILA)	7	Pacific poison oak (TODI)	---
	White fir (ABCO)	2	Incense cedar (CADE27)	5
			California honeysuckle (LOHI2)	5
			Ponderosa pine (PIPO)	4
			Douglas-fir (PSME)	3
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Tanoak (LIDE3)	2
			White fir (ABCO)	2
			Whiteleaf manzanita (ARMA)	2
			Orcutt brome (BROR2)	2
			Deerbrush (CEIN3)	2
Rock outcrop.				
822:				
Bonepile--------	White fir (ABCO)	37	Greenleaf manzanita (ARPA6)	18
	Ponderosa pine (PIPO)	29	White fir (ABCO)	15
	Sugar pine (PILA)	17	Sierra chinquapin (CHSE11)	15
	Douglas-fir (PSME)	7	Whitethorn ceanothus (CECO)	12
	California black oak (QUKE)	6	Sugar pine (PILA)	4
	Incense cedar (CADE27)	4	Douglas-fir (PSME)	4
			Western brackenfern (PTAQ)	4
			California needlegrass (ACOCC)	3
			California black oak (QUKE)	2
			Sierra gooseberry (RIRO)	2
			Incense cedar (CADE27)	2
			Bottlebrush squirreltail (ELEL5)	2
			Ponderosa pine (PIPO)	2
			Whitevein shinleaf (PYPI2)	2
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Bitter cherry (PREM)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
823:				
Bonepile--------	White fir (ABCO)	37	Greenleaf manzanita (ARPA6)	18
	Ponderosa pine (PIPO)	29		
	Sugar pine (PILA)	17	White fir (ABCO)	15
	Douglas-fir (PSME)	7	Sierra chinquapin (CHSE11)	15
	California black oak (QUKE)	6	Whitethorn ceanothus (CECO)	12
	Incense cedar (CADE27)	4	Sugar pine (PILA)	4
			Douglas-fir (PSME)	4
			Western brackenfern (PTAQ)	4
			California needlegrass (ACOCC)	3
			California black oak (QUKE)	2
			Sierra gooseberry (RIRO)	2
			Incense cedar (CADE27)	2
			Bottlebrush squirreltail (ELEL5)	2
			Ponderosa pine (PIPO)	2
			Whitevein shinleaf (PYPI2)	2
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Bitter cherry (PREM)	1
824:				
Beecee----------	Douglas-fir (PSME)	30	California hazel (COCOC)	10
	White fir (ABCO)	25	Pacific dogwood (CONU4)	10
	California black oak (QUKE)	20	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	12	California black oak (QUKE)	7
	Ponderosa pine (PIPO)	8	White fir (ABCO)	7
	Sugar pine (PILA)	5	Douglas-fir (PSME)	5
			Deerbrush (CEIN3)	4
			Broadleaf starflower (TRBOL)	4
			Sierra chinquapin (CHSE11)	3
			Tanoak (LIDE3)	3
			Western brackenfern (PTAQ)	2
			Whitevein shinleaf (PYPI2)	2
825:				
Beecee----------	Douglas-fir (PSME)	30	California hazel (COCOC)	10
	White fir (ABCO)	25	Pacific dogwood (CONU4)	10
	California black oak (QUKE)	20	Incense cedar (CADE27)	8
	Incense cedar (CADE27)	12	California black oak (QUKE)	7
	Ponderosa pine (PIPO)	8	White fir (ABCO)	7
	Sugar pine (PILA)	5	Douglas-fir (PSME)	5
			Deerbrush (CEIN3)	4
			Broadleaf starflower (TRBOL)	4
			Sierra chinquapin (CHSE11)	3
			Tanoak (LIDE3)	3
			Western brackenfern (PTAQ)	2
			Whitevein shinleaf (PYPI2)	2

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
825:				
Lydon----------	California black oak (QUKE)	25	Canyon live oak (QUCH2)	10
			California needlegrass (ACOCC)	8
	Douglas-fir (PSME)	21		
	Ponderosa pine (PIPO)	20	Carex (CAREX)	7
	Canyon live oak (QUCH2)	13	California black oak (QUKE)	7
	Incense cedar (CADE27)	12		
	Sugar pine (PILA)	7	Pacific poison oak (TODI)	---
	White fir (ABCO)	2	Incense cedar (CADE27)	5
			California honeysuckle (LOHI2)	5
			Ponderosa pine (PIPO)	4
			Douglas-fir (PSME)	3
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Tanoak (LIDE3)	2
			White fir (ABCO)	2
			Whiteleaf manzanita (ARMA)	2
			Orcutt brome (BROR2)	2
			Deerbrush (CEIN3)	2
826:				
Redbone---------	Ponderosa pine (PIPO)	27	Incense cedar (CADE27)	15
	White fir (ABCO)	25	White fir (ABCO)	12
	Sugar pine (PILA)	18	Prostrate ceanothus (CEPR)	12
	Douglas-fir (PSME)	16		
	Incense cedar (CADE27)	13	Common snowberry (SYAL)	10
	California black oak (QUKE)	1	Pacific dogwood (CONU4)	7
			Sierra chinquapin (CHSE11)	7
			Greenleaf manzanita (ARPA6)	5
			Deerbrush (CEIN3)	5
			California needlegrass (ACOCC)	5
			Whitevein shinleaf (PYPI2)	3
			Sugar pine (PILA)	2
			Douglas-fir (PSME)	2
			Canyon live oak (QUCH2)	2
			Broadleaf starflower (TRBOL)	2

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
827:				
Redbone---------	Ponderosa pine (PIPO)	27	Incense cedar (CADE27)	15
	White fir (ABCO)	25	White fir (ABCO)	12
	Sugar pine (PILA)	18	Prostrate ceanothus (CEPR)	12
	Douglas-fir (PSME)	16		
	Incense cedar (CADE27)	13	Common snowberry (SYAL)	10
	California black oak (QUKE)	1	Pacific dogwood (CONU4)	7
			Sierra chinquapin (CHSE11)	7
			Greenleaf manzanita (ARPA6)	5
			Deerbrush (CEIN3)	5
			California needlegrass (ACOCC)	5
			Whitevein shinleaf (PYPI2)	3
			Sugar pine (PILA)	2
			Douglas-fir (PSME)	2
			Canyon live oak (QUCH2)	2
			Broadleaf starflower (TRBOL)	2
829:				
Paradiso--------	Ponderosa pine (PIPO)	42	California black oak (QUKE)	10
	Douglas-fir (PSME)	19		
	California black oak (QUKE)	13	Incense cedar (CADE27)	9
			Western brackenfern (PTAQ)	7
	Incense cedar (CADE27)	11		
	White fir (ABCO)	10	Scotch broom (CYSC4)	6
	Sugar pine (PILA)	4	Pacific poison oak (TODI)	---
	Tanoak (LIDE3)	1	Broadleaf starflower (TRBOL)	5
			Deerbrush (CEIN3)	4
			Whiteleaf manzanita (ARMA)	4
			Lupine (LUPIN)	4
			White fir (ABCO)	1
			Orcutt brome (BROR2)	1
			Ponderosa pine (PIPO)	1
			Canyon live oak (QUCH2)	1
830:				
Paradiso--------	Ponderosa pine (PIPO)	42	California black oak (QUKE)	10
	Douglas-fir (PSME)	19		
	California black oak (QUKE)	13	Incense cedar (CADE27)	9
			Western brackenfern (PTAQ)	7
	Incense cedar (CADE27)	11		
	White fir (ABCO)	10	Scotch broom (CYSC4)	6
	Sugar pine (PILA)	4	Pacific poison oak (TODI)	---
	Tanoak (LIDE3)	1	Broadleaf starflower (TRBOL)	5
			Deerbrush (CEIN3)	4
			Whiteleaf manzanita (ARMA)	4
			Lupine (LUPIN)	4
			White fir (ABCO)	1
			Orcutt brome (BROR2)	1
			Ponderosa pine (PIPO)	1
			Canyon live oak (QUCH2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
831:				
Surnuf----------	Douglas-fir (PSME)	25	Tanoak (LIDE3)	28
	Ponderosa pine (PIPO)	22	White fir (ABCO)	7
	Sugar pine (PILA)	18	Incense cedar (CADE27)	4
	White fir (ABCO)	13	California black oak (QUKE)	2
	Tanoak (LIDE3)	10		
	California black oak (QUKE)	7	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	5	Broadleaf starflower (TRBOL)	2
			Douglas-fir (PSME)	2
			Common snowberry (SYAL)	2
Bigridge--------	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1
Spine----------	Douglas-fir (PSME)	25	Tanoak (LIDE3)	26
	Sugar pine (PILA)	16	Whiteleaf manzanita (ARMA)	8
	Tanoak (LIDE3)	15		
	Ponderosa pine (PIPO)	13	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	13	Pacific poison oak (TODI)	---
	California black oak (QUKE)	11	Incense cedar (CADE27)	3
	Incense cedar (CADE27)	5	Douglas-fir (PSME)	3
	White fir (ABCO)	2	California black oak (QUKE)	3
			Broadleaf starflower (TRBOL)	3
			White fir (ABCO)	1
			Pacific madrone (ARME)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
832:				
Surnuf----------	Douglas-fir (PSME)	25	Tanoak (LIDE3)	28
	Ponderosa pine (PIPO)	22	White fir (ABCO)	7
	Sugar pine (PILA)	18	Incense cedar (CADE27)	4
	White fir (ABCO)	13	California black oak (QUKE)	2
	Tanoak (LIDE3)	10		
	California black oak (QUKE)	7	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	5	Broadleaf starflower (TRBOL)	2
			Douglas-fir (PSME)	2
			Common snowberry (SYAL)	2

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
832:				
Bigridge--------	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1
Spine----------	Douglas-fir (PSME)	25	Tanoak (LIDE3)	26
	Sugar pine (PILA)	16	Whiteleaf manzanita (ARMA)	8
	Tanoak (LIDE3)	15	Canyon live oak (QUCH2)	8
	Ponderosa pine (PIPO)	13	Pacific poison oak (TODI)	---
	Canyon live oak (QUCH2)	13	Incense cedar (CADE27)	3
	California black oak (QUKE)	11	Douglas-fir (PSME)	3
	Incense cedar (CADE27)	5	California black oak (QUKE)	3
	White fir (ABCO)	2	Broadleaf starflower (TRBOL)	3
			White fir (ABCO)	1
			Pacific madrone (ARME)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
833:				
Surnuf----------	Douglas-fir (PSME)	25	Tanoak (LIDE3)	28
	Ponderosa pine (PIPO)	22	White fir (ABCO)	7
	Sugar pine (PILA)	18	Incense cedar (CADE27)	4
	White fir (ABCO)	13	California black oak (QUKE)	2
	Tanoak (LIDE3)	10	Pacific poison oak (TODI)	---
	California black oak (QUKE)	7	Broadleaf starflower (TRBOL)	2
	Incense cedar (CADE27)	5	Douglas-fir (PSME)	2
			Common snowberry (SYAL)	2
Bigridge--------	Ponderosa pine (PIPO)	45	Whiteleaf manzanita (ARMA)	10
	California black oak (QUKE)	28	Toyon (HEAR5)	5
	Interior live oak (QUWI2)	13	Ryegrass (LOLIU)	3
	Pacific madrone (ARME)	5	Pacific poison oak (TODI)	---
	Foothill pine (PISA2)	3	Ponderosa pine (PIPO)	3
	Douglas-fir (PSME)	3	Deerbrush (CEIN3)	3
	Canyon live oak (QUCH2)	3	California buckthorn (FRCAT2)	3
			Canyon live oak (QUCH2)	3
			Bigleaf maple (ACMA3)	1
			Pacific madrone (ARME)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
833:				
Spine----------	Douglas-fir (PSME)	25	Tanoak (LIDE3)	26
	Sugar pine (PILA)	16	Whiteleaf manzanita (ARMA)	8
	Tanoak (LIDE3)	15		
	Ponderosa pine (PIPO)	13	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	13	Pacific poison oak (TODI)	---
	California black oak (QUKE)	11	Incense cedar (CADE27)	3
			Douglas-fir (PSME)	3
	Incense cedar (CADE27)	5	California black oak (QUKE)	3
	White fir (ABCO)	2		
			Broadleaf starflower (TRBOL)	3
			White fir (ABCO)	1
			Pacific madrone (ARME)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
834:				
Hietanen--------	Ponderosa pine (PIPO)	24	Tanoak (LIDE3)	25
	Douglas-fir (PSME)	24	Douglas-fir (PSME)	5
	Sugar pine (PILA)	15	Incense cedar (CADE27)	4
	White fir (ABCO)	11	Pacific dogwood (CONU4)	3
	Tanoak (LIDE3)	10	Whiteleaf manzanita (ARMA)	3
	Incense cedar (CADE27)	9		
	California black oak (QUKE)	7	White fir (ABCO)	2
			Sugar pine (PILA)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			California black oak (QUKE)	2
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			Whitevein shinleaf (PYPI2)	1
			Broadleaf starflower (TRBOL)	1
Mac----------	Douglas-fir (PSME)	33	Tanoak (LIDE3)	30
	Ponderosa pine (PIPO)	20	Douglas-fir (PSME)	8
	Sugar pine (PILA)	15	Incense cedar (CADE27)	3
	Tanoak (LIDE3)	12	Sugar pine (PILA)	2
	California black oak (QUKE)	10	Pacific poison oak (TODI)	---
			White fir (ABCO)	2
	White fir (ABCO)	7	California black oak (QUKE)	2
	Incense cedar (CADE27)	3		
			California honeysuckle (LOHI2)	2

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
835:				
Hietanen--------	Ponderosa pine (PIPO)	24	Tanoak (LIDE3)	25
	Douglas-fir (PSME)	24	Douglas-fir (PSME)	5
	Sugar pine (PILA)	15	Incense cedar (CADE27)	4
	White fir (ABCO)	11	Pacific dogwood (CONU4)	3
	Tanoak (LIDE3)	10	Whiteleaf manzanita (ARMA)	3
	Incense cedar (CADE27)	9		
	California black oak (QUKE)	7	White fir (ABCO)	2
			Sugar pine (PILA)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			California black oak (QUKE)	2
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			Whitevein shinleaf (PYPI2)	1
			Broadleaf starflower (TRBOL)	1
Mac----------	Douglas-fir (PSME)	33	Tanoak (LIDE3)	30
	Ponderosa pine (PIPO)	20	Douglas-fir (PSME)	8
	Sugar pine (PILA)	15	Incense cedar (CADE27)	3
	Tanoak (LIDE3)	12	Sugar pine (PILA)	2
	California black oak (QUKE)	10	Pacific poison oak (TODI)	---
	White fir (ABCO)	7	White fir (ABCO)	2
	Incense cedar (CADE27)	3	California black oak (QUKE)	2
			California honeysuckle (LOHI2)	2
836:				
Hietanen--------	Ponderosa pine (PIPO)	24	Tanoak (LIDE3)	25
	Douglas-fir (PSME)	24	Douglas-fir (PSME)	5
	Sugar pine (PILA)	15	Incense cedar (CADE27)	4
	White fir (ABCO)	11	Pacific dogwood (CONU4)	3
	Tanoak (LIDE3)	10	Whiteleaf manzanita (ARMA)	3
	Incense cedar (CADE27)	9		
	California black oak (QUKE)	7	White fir (ABCO)	2
			Sugar pine (PILA)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			California black oak (QUKE)	2
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			Whitevein shinleaf (PYPI2)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
836:				
Mac	Douglas-fir (PSME)	33	Tanoak (LIDE3)	30
	Ponderosa pine (PIPO)	20	Douglas-fir (PSME)	8
	Sugar pine (PILA)	15	Incense cedar (CADE27)	3
	Tanoak (LIDE3)	12	Sugar pine (PILA)	2
	California black oak (QUKE)	10	Pacific poison oak (TODI)	---
			White fir (ABCO)	2
	White fir (ABCO)	7	California black oak (QUKE)	2
	Incense cedar (CADE27)	3		
			California honeysuckle (LOHI2)	2
Spine	Douglas-fir (PSME)	25	Tanoak (LIDE3)	26
	Sugar pine (PILA)	16	Whiteleaf manzanita (ARMA)	8
	Tanoak (LIDE3)	15		
	Ponderosa pine (PIPO)	13	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	13	Pacific poison oak (TODI)	---
	California black oak (QUKE)	11	Incense cedar (CADE27)	3
			Douglas-fir (PSME)	3
	Incense cedar (CADE27)	5	California black oak (QUKE)	3
	White fir (ABCO)	2		
			Broadleaf starflower (TRBOL)	3
			White fir (ABCO)	1
			Pacific madrone (ARME)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
837:				
Hietanen	Ponderosa pine (PIPO)	24	Tanoak (LIDE3)	25
	Douglas-fir (PSME)	24	Douglas-fir (PSME)	5
	Sugar pine (PILA)	15	Incense cedar (CADE27)	4
	White fir (ABCO)	11	Pacific dogwood (CONU4)	3
	Tanoak (LIDE3)	10	Whiteleaf manzanita (ARMA)	3
	Incense cedar (CADE27)	9		
	California black oak (QUKE)	7	White fir (ABCO)	2
			Sugar pine (PILA)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			California black oak (QUKE)	2
			Prostrate ceanothus (CEPR)	1
			Sierra gooseberry (RIRO)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			Whitevein shinleaf (PYPI2)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
837:				
Spine----------	Douglas-fir (PSME)	25	Tanoak (LIDE3)	26
	Sugar pine (PILA)	16	Whiteleaf manzanita (ARMA)	8
	Tanoak (LIDE3)	15		
	Ponderosa pine (PIPO)	13	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	13	Pacific poison oak (TODI)	---
	California black oak (QUKE)	11	Incense cedar (CADE27)	3
			Douglas-fir (PSME)	3
	Incense cedar (CADE27)	5	California black oak (QUKE)	3
	White fir (ABCO)	2		
			Broadleaf starflower (TRBOL)	3
			White fir (ABCO)	1
			Pacific madrone (ARME)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1
Mac----------	Douglas-fir (PSME)	33	Tanoak (LIDE3)	30
	Ponderosa pine (PIPO)	20	Douglas-fir (PSME)	8
	Sugar pine (PILA)	15	Incense cedar (CADE27)	3
	Tanoak (LIDE3)	12	Sugar pine (PILA)	2
	California black oak (QUKE)	10	Pacific poison oak (TODI)	---
			White fir (ABCO)	2
	White fir (ABCO)	7	California black oak (QUKE)	2
	Incense cedar (CADE27)	3		
			California honeysuckle (LOHI2)	2
838:				
Dixmine----------	Douglas-fir (PSME)	45	Tanoak (LIDE3)	7
	California black oak (QUKE)	15	Canyon live oak (QUCH2)	7
			Deerbrush (CEIN3)	5
	Sugar pine (PILA)	8	Douglas-fir (PSME)	5
	White fir (ABCO)	8	Pacific poison oak (TODI)	---
	Incense cedar (CADE27)	8	Broadleaf starflower (TRBOL)	4
	Ponderosa pine (PIPO)	7		
	Canyon live oak (QUCH2)	6	Incense cedar (CADE27)	2
	Tanoak (LIDE3)	3	Sugar pine (PILA)	2
			California black oak (QUKE)	2
			White fir (ABCO)	2
			California needlegrass (ACOCC)	2
Spine----------	Douglas-fir (PSME)	25	Tanoak (LIDE3)	26
	Sugar pine (PILA)	16	Whiteleaf manzanita (ARMA)	8
	Tanoak (LIDE3)	15		
	Ponderosa pine (PIPO)	13	Canyon live oak (QUCH2)	8
	Canyon live oak (QUCH2)	13	Pacific poison oak (TODI)	---
	California black oak (QUKE)	11	Incense cedar (CADE27)	3
			Douglas-fir (PSME)	3
	Incense cedar (CADE27)	5	California black oak (QUKE)	3
	White fir (ABCO)	2		
			Broadleaf starflower (TRBOL)	3
			White fir (ABCO)	1
			Pacific madrone (ARME)	1
			Greenleaf manzanita (ARPA6)	1
			Sugar pine (PILA)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
838:				
Mac----------	Douglas-fir (PSME)	33	Tanoak (LIDE3)	30
	Ponderosa pine (PIPO)	20	Douglas-fir (PSME)	8
	Sugar pine (PILA)	15	Incense cedar (CADE27)	3
	Tanoak (LIDE3)	12	Sugar pine (PILA)	2
	California black oak (QUKE)	10	Pacific poison oak (TODI)	---
			White fir (ABCO)	2
	White fir (ABCO)	7	California black oak (QUKE)	2
	Incense cedar (CADE27)	3		
			California honeysuckle (LOHI2)	2
839:				
Chawanakee------	Ponderosa pine (PIPO)	43	Canyon live oak (QUCH2)	10
	Sugar pine (PILA)	23	Whiteleaf manzanita (ARMA)	10
	White fir (ABCO)	14		
	Incense cedar (CADE27)	10	Greenleaf manzanita (ARPA6)	8
	Canyon live oak (QUCH2)	7		
	California black oak (QUKE)	3	Shrub tanoak (LIDEE)	7
			Sugar pine (PILA)	4
			Ponderosa pine (PIPO)	4
			White fir (ABCO)	4
			Incense cedar (CADE27)	2
			Whitethorn ceanothus (CECO)	2
			Sierra chinquapin (CHSE11)	2
			Western brackenfern (PTAQ)	1
Billscabin------	White fir (ABCO)	32	White fir (ABCO)	13
	Douglas-fir (PSME)	25	Incense cedar (CADE27)	7
	Sugar pine (PILA)	19	Whitethorn ceanothus (CECO)	4
	Ponderosa pine (PIPO)	12		
	Incense cedar (CADE27)	7	Douglas-fir (PSME)	4
	California black oak (QUKE)	4	Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	3
	Pacific madrone (ARME)	1	Broadleaf starflower (TRBOL)	3
			California hazel (COCOC)	2
			Common snowberry (SYAL)	2
			Sierra chinquapin (CHSE11)	2
			Bigleaf maple (ACMA3)	1
			Tanoak (LIDE3)	1
			Ponderosa pine (PIPO)	1
			Huckleberry oak (QUVA)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra gooseberry (RIRO)	1
			California black oak (QUKE)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
841:				
Billscabin------	White fir (ABCO)	32	White fir (ABCO)	13
	Douglas-fir (PSME)	25	Incense cedar (CADE27)	7
	Sugar pine (PILA)	19	Whitethorn ceanothus (CECO)	4
	Ponderosa pine (PIPO)	12	Douglas-fir (PSME)	4
	Incense cedar (CADE27)	7	Pacific dogwood (CONU4)	3
	California black oak (QUKE)	4	Deerbrush (CEIN3)	3
	Pacific madrone (ARME)	1	Broadleaf starflower (TRBOL)	3
			California hazel (COCOC)	2
			Common snowberry (SYAL)	2
			Sierra chinquapin (CHSE11)	2
			Bigleaf maple (ACMA3)	1
			Tanoak (LIDE3)	1
			Ponderosa pine (PIPO)	1
			Huckleberry oak (QUVA)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra gooseberry (RIRO)	1
			California black oak (QUKE)	1
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
842:				
Billscabin------	White fir (ABCO)	32	White fir (ABCO)	13
	Douglas-fir (PSME)	25	Incense cedar (CADE27)	7
	Sugar pine (PILA)	19	Whitethorn ceanothus (CECO)	4
	Ponderosa pine (PIPO)	12		
	Incense cedar (CADE27)	7	Douglas-fir (PSME)	4
	California black oak (QUKE)	4	Pacific dogwood (CONU4)	3
			Deerbrush (CEIN3)	3
	Pacific madrone (ARME)	1	Broadleaf starflower (TRBOL)	3
			California hazel (COCOC)	2
			Common snowberry (SYAL)	2
			Sierra chinquapin (CHSE11)	2
			Bigleaf maple (ACMA3)	1
			Tanoak (LIDE3)	1
			Ponderosa pine (PIPO)	1
			Huckleberry oak (QUVA)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra gooseberry (RIRO)	1
			California black oak (QUKE)	1
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6		
	Pacific madrone (ARME)	1	Greenleaf manzanita (ARPA6)	3
			Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
846:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Lewisflat-------	Douglas-fir (PSME)	22	Tanoak (LIDE3)	17
	White fir (ABCO)	20	White fir (ABCO)	11
	Sugar pine (PILA)	20	Incense cedar (CADE27)	10
	Ponderosa pine (PIPO)	18	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	11	Pipsissewa (CHUM)	2
	California black oak (QUKE)	6	Douglas-fir (PSME)	2
	Pacific madrone (ARME)	3	Pacific madrone (ARME)	2
			Pacific dogwood (CONU4)	2
			Iris (IRIS)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	1
			California wild grape (VICA5)	1
			Whitevein shinleaf (PYPI2)	1
			California black oak (QUKE)	1
			Woodland strawberry (FRVE)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
847:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Lewisflat-------	Douglas-fir (PSME)	22	Tanoak (LIDE3)	17
	White fir (ABCO)	20	White fir (ABCO)	11
	Sugar pine (PILA)	20	Incense cedar (CADE27)	10
	Ponderosa pine (PIPO)	18	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	11	Pipsissewa (CHUM)	2
	California black oak (QUKE)	6	Douglas-fir (PSME)	2
	Pacific madrone (ARME)	3	Pacific madrone (ARME)	2
			Pacific dogwood (CONU4)	2
			Iris (IRIS)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	1
			California wild grape (VICA5)	1
			Whitevein shinleaf (PYPI2)	1
			California black oak (QUKE)	1
			Woodland strawberry (FRVE)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
848:				
Bonneyridge-----	Ponderosa pine (PIPO)	25	White fir (ABCO)	11
	Sugar pine (PILA)	24	Incense cedar (CADE27)	10
	White fir (ABCO)	22	Tanoak (LIDE3)	9
	Incense cedar (CADE27)	14	Whitethorn ceanothus (CECO)	4
	California black oak (QUKE)	8	Western brackenfern (PTAQ)	4
	Douglas-fir (PSME)	6	Greenleaf manzanita (ARPA6)	3
	Pacific madrone (ARME)	1	Pacific dogwood (CONU4)	3
			Sierra chinquapin (CHSE11)	2
			Deerbrush (CEIN3)	2
			California black oak (QUKE)	2
			California hazel (COCOC)	2
			Sugar pine (PILA)	2
			Whiteleaf manzanita (ARMA)	1
			Common snowberry (SYAL)	1
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			California needlegrass (ACOCC)	1
			Iris (IRIS)	1
			Sierra gooseberry (RIRO)	1
			Broadleaf starflower (TRBOL)	1
			Lupine (LUPIN)	1
			Ponderosa pine (PIPO)	1
Lewisflat-------	Douglas-fir (PSME)	22	Tanoak (LIDE3)	17
	White fir (ABCO)	20	White fir (ABCO)	11
	Sugar pine (PILA)	20	Incense cedar (CADE27)	10
	Ponderosa pine (PIPO)	18	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	11	Pipsissewa (CHUM)	2
	California black oak (QUKE)	6	Douglas-fir (PSME)	2
	Pacific madrone (ARME)	3	Pacific madrone (ARME)	2
			Pacific dogwood (CONU4)	2
			Iris (IRIS)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	1
			California wild grape (VICA5)	1
			Whitevein shinleaf (PYPI2)	1
			California black oak (QUKE)	1
			Woodland strawberry (FRVE)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
850:				
Lewisflat-------	Douglas-fir (PSME)	22	Tanoak (LIDE3)	17
	White fir (ABCO)	20	White fir (ABCO)	11
	Sugar pine (PILA)	20	Incense cedar (CADE27)	10
	Ponderosa pine (PIPO)	18	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	11		
	California black oak (QUKE)	6	Pipsissewa (CHUM)	2
			Douglas-fir (PSME)	2
	Pacific madrone (ARME)	3	Pacific madrone (ARME)	2
			Pacific dogwood (CONU4)	2
			Iris (IRIS)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	1
			California wild grape (VICA5)	1
			Whitevein shinleaf (PYPI2)	1
			California black oak (QUKE)	1
			Woodland strawberry (FRVE)	1
851:				
Lewisflat-------	Douglas-fir (PSME)	22	Tanoak (LIDE3)	17
	White fir (ABCO)	20	White fir (ABCO)	11
	Sugar pine (PILA)	20	Incense cedar (CADE27)	10
	Ponderosa pine (PIPO)	18	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	11		
	California black oak (QUKE)	6	Pipsissewa (CHUM)	2
			Douglas-fir (PSME)	2
	Pacific madrone (ARME)	3	Pacific madrone (ARME)	2
			Pacific dogwood (CONU4)	2
			Iris (IRIS)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	1
			California wild grape (VICA5)	1
			Whitevein shinleaf (PYPI2)	1
			California black oak (QUKE)	1
			Woodland strawberry (FRVE)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
852:				
Lewisflat-------	Douglas-fir (PSME)	22	Tanoak (LIDE3)	17
	White fir (ABCO)	20	White fir (ABCO)	11
	Sugar pine (PILA)	20	Incense cedar (CADE27)	10
	Ponderosa pine (PIPO)	18	Broadleaf starflower (TRBOL)	4
	Incense cedar (CADE27)	11		
	California black oak (QUKE)	6	Pipsissewa (CHUM)	2
			Douglas-fir (PSME)	2
	Pacific madrone (ARME)	3	Pacific madrone (ARME)	2
			Pacific dogwood (CONU4)	2
			Iris (IRIS)	2
			Deerbrush (CEIN3)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	1
			California wild grape (VICA5)	1
			Whitevein shinleaf (PYPI2)	1
			California black oak (QUKE)	1
			Woodland strawberry (FRVE)	1
860:				
Toadtown--------	Douglas-fir (PSME)	27	Tanoak (LIDE3)	25
	Ponderosa pine (PIPO)	19	White fir (ABCO)	8
	Sugar pine (PILA)	16	Incense cedar (CADE27)	8
	White fir (ABCO)	16	Pacific madrone (ARME)	7
	Incense cedar (CADE27)	7	Deerbrush (CEIN3)	6
	Tanoak (LIDE3)	6	California black oak (QUKE)	3
	Pacific madrone (ARME)	5		
	California black oak (QUKE)	4	Broadleaf starflower (TRBOL)	3
			Douglas-fir (PSME)	3
			Sierra gooseberry (RIRO)	1
			Sugar pine (PILA)	1
			Pacific dogwood (CONU4)	1
			Common snowberry (SYAL)	1
			Western brackenfern (PTAQ)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Himalaya blackberry (RUDI2)	1
			Whiteleaf manzanita (ARMA)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
860:				
Powellton-------	Douglas-fir (PSME)	22	Tanoak (LIDE3)	20
	Sugar pine (PILA)	16	White fir (ABCO)	5
	White fir (ABCO)	15	Douglas-fir (PSME)	5
	Ponderosa pine (PIPO)	12	Deerbrush (CEIN3)	4
	Tanoak (LIDE3)	12	Incense cedar (CADE27)	2
	Incense cedar (CADE27)	8	Pacific madrone (ARME)	2
	California black oak (QUKE)	8	California hazel (COCOC)	2
	Pacific madrone (ARME)	7	Broadleaf starflower (TRBOL)	2
			Himalaya blackberry (RUDI2)	2
			Pacific dogwood (CONU4)	1
			Western brackenfern (PTAQ)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
861:				
Toadtown--------	Douglas-fir (PSME)	27	Tanoak (LIDE3)	25
	Ponderosa pine (PIPO)	19	White fir (ABCO)	8
	Sugar pine (PILA)	16	Incense cedar (CADE27)	8
	White fir (ABCO)	16	Pacific madrone (ARME)	7
	Incense cedar (CADE27)	7	Deerbrush (CEIN3)	6
	Tanoak (LIDE3)	6	California black oak (QUKE)	3
	Pacific madrone (ARME)	5	Broadleaf starflower (TRBOL)	3
	California black oak (QUKE)	4	Douglas-fir (PSME)	3
			Sierra gooseberry (RIRO)	1
			Sugar pine (PILA)	1
			Pacific dogwood (CONU4)	1
			Common snowberry (SYAL)	1
			Western brackenfern (PTAQ)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Himalaya blackberry (RUDI2)	1
			Whiteleaf manzanita (ARMA)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
861:				
Powellton-------	Douglas-fir (PSME)	22	Tanoak (LIDE3)	20
	Sugar pine (PILA)	16	White fir (ABCO)	5
	White fir (ABCO)	15	Douglas-fir (PSME)	5
	Ponderosa pine (PIPO)	12	Deerbrush (CEIN3)	4
	Tanoak (LIDE3)	12	Incense cedar (CADE27)	2
	Incense cedar (CADE27)	8	Pacific madrone (ARME)	2
	California black oak (QUKE)	8	California hazel (COCOC)	2
	Pacific madrone (ARME)	7	Broadleaf starflower (TRBOL)	2
			Himalaya blackberry (RUDI2)	2
			Pacific dogwood (CONU4)	1
			Western brackenfern (PTAQ)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
862:				
Toadtown--------	Douglas-fir (PSME)	27	Tanoak (LIDE3)	25
	Ponderosa pine (PIPO)	19	White fir (ABCO)	8
	Sugar pine (PILA)	16	Incense cedar (CADE27)	8
	White fir (ABCO)	16	Pacific madrone (ARME)	7
	Incense cedar (CADE27)	7	Deerbrush (CEIN3)	6
	Tanoak (LIDE3)	6	California black oak (QUKE)	3
	Pacific madrone (ARME)	5	Broadleaf starflower (TRBOL)	3
	California black oak (QUKE)	4	Douglas-fir (PSME)	3
			Sierra gooseberry (RIRO)	1
			Sugar pine (PILA)	1
			Pacific dogwood (CONU4)	1
			Common snowberry (SYAL)	1
			Western brackenfern (PTAQ)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Himalaya blackberry (RUDI2)	1
			Whiteleaf manzanita (ARMA)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
862:				
Powellton-------	Douglas-fir (PSME)	22	Tanoak (LIDE3)	20
	Sugar pine (PILA)	16	White fir (ABCO)	5
	White fir (ABCO)	15	Douglas-fir (PSME)	5
	Ponderosa pine (PIPO)	12	Deerbrush (CEIN3)	4
	Tanoak (LIDE3)	12	Incense cedar (CADE27)	2
	Incense cedar (CADE27)	8	Pacific madrone (ARME)	2
	California black oak (QUKE)	8	California hazel (COCOC)	2
	Pacific madrone (ARME)	7	Broadleaf starflower (TRBOL)	2
			Himalaya blackberry (RUDI2)	2
			Pacific dogwood (CONU4)	1
			Western brackenfern (PTAQ)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
863:				
Toadtown--------	Douglas-fir (PSME)	27	Tanoak (LIDE3)	25
	Ponderosa pine (PIPO)	19	White fir (ABCO)	8
	Sugar pine (PILA)	16	Incense cedar (CADE27)	8
	White fir (ABCO)	16	Pacific madrone (ARME)	7
	Incense cedar (CADE27)	7	Deerbrush (CEIN3)	6
	Tanoak (LIDE3)	6	California black oak (QUKE)	3
	Pacific madrone (ARME)	5	Broadleaf starflower (TRBOL)	3
	California black oak (QUKE)	4	Douglas-fir (PSME)	3
			Sierra gooseberry (RIRO)	1
			Sugar pine (PILA)	1
			Pacific dogwood (CONU4)	1
			Common snowberry (SYAL)	1
			Western brackenfern (PTAQ)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Himalaya blackberry (RUDI2)	1
			Whiteleaf manzanita (ARMA)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
863:				
Powellton-------	Douglas-fir (PSME)	22	Tanoak (LIDE3)	20
	Sugar pine (PILA)	16	White fir (ABCO)	5
	White fir (ABCO)	15	Douglas-fir (PSME)	5
	Ponderosa pine (PIPO)	12	Deerbrush (CEIN3)	4
	Tanoak (LIDE3)	12	Incense cedar (CADE27)	2
	Incense cedar (CADE27)	8	Pacific madrone (ARME)	2
	California black oak (QUKE)	8	California hazel (COCOC)	2
	Pacific madrone (ARME)	7	Broadleaf starflower (TRBOL)	2
			Himalaya blackberry (RUDI2)	2
			Pacific dogwood (CONU4)	1
			Western brackenfern (PTAQ)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
880:				
Sites taxadjunct	Ponderosa pine (PIPO)	34	Deerbrush (CEIN3)	13
	Pacific madrone (ARME)	18	Tanoak (LIDE3)	12
	Douglas-fir (PSME)	17	Douglas-fir (PSME)	7
	Incense cedar (CADE27)	8	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	7	Pacific madrone (ARME)	6
	California black oak (QUKE)	5	California black oak (QUKE)	4
	White fir (ABCO)	4	Western brackenfern (PTAQ)	3
			Pacific dogwood (CONU4)	2
			Himalaya blackberry (RUDI2)	2
			California honeysuckle (LOHI2)	2
			California wildrose (ROCA2)	1
			White fir (ABCO)	1
			Common snowberry (SYAL)	1
			Ponderosa pine (PIPO)	1
			Orcutt brome (BROR2)	1
			Sugar pine (PILA)	1
Jocal taxadjunct	Ponderosa pine (PIPO)	26	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	20	Incense cedar (CADE27)	5
	Sugar pine (PILA)	17	Douglas-fir (PSME)	5
	Pacific madrone (ARME)	12	Pacific madrone (ARME)	4
	White fir (ABCO)	10	Sugar pine (PILA)	3
	Incense cedar (CADE27)	10	Pacific dogwood (CONU4)	2
	California black oak (QUKE)	5	Western brackenfern (PTAQ)	2
			Sierra gooseberry (RIRO)	2
			White fir (ABCO)	2
			Deerbrush (CEIN3)	1
			California black oak (QUKE)	1
			Orcutt brome (BROR2)	1
			Pipsissewa (CHUM)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
881:				
Sites taxadjunct	Ponderosa pine (PIPO)	34	Deerbrush (CEIN3)	13
	Pacific madrone (ARME)	18	Tanoak (LIDE3)	12
	Douglas-fir (PSME)	17	Douglas-fir (PSME)	7
	Incense cedar (CADE27)	8	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	7	Pacific madrone (ARME)	6
	California black oak (QUKE)	5	California black oak (QUKE)	4
	White fir (ABCO)	4	Western brackenfern (PTAQ)	3
			Pacific dogwood (CONU4)	2
			Himalaya blackberry (RUDI2)	2
			California honeysuckle (LOHI2)	2
			California wildrose (ROCA2)	1
			White fir (ABCO)	1
			Common snowberry (SYAL)	1
			Ponderosa pine (PIPO)	1
			Orcutt brome (BROR2)	1
			Sugar pine (PILA)	1
Jocal taxadjunct	Ponderosa pine (PIPO)	26	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	20	Incense cedar (CADE27)	5
	Sugar pine (PILA)	17	Douglas-fir (PSME)	5
	Pacific madrone (ARME)	12	Pacific madrone (ARME)	4
	White fir (ABCO)	10	Sugar pine (PILA)	3
	Incense cedar (CADE27)	10	Pacific dogwood (CONU4)	2
	California black oak (QUKE)	5	Western brackenfern (PTAQ)	2
			Sierra gooseberry (RIRO)	2
			White fir (ABCO)	2
			Deerbrush (CEIN3)	1
			California black oak (QUKE)	1
			Orcutt brome (BROR2)	1
			Pipsissewa (CHUM)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
882:				
Sites taxadjunct	Ponderosa pine (PIPO)	34	Deerbrush (CEIN3)	13
	Pacific madrone (ARME)	18	Tanoak (LIDE3)	12
	Douglas-fir (PSME)	17	Douglas-fir (PSME)	7
	Incense cedar (CADE27)	8	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	7	Pacific madrone (ARME)	6
	California black oak (QUKE)	5	California black oak (QUKE)	4
	White fir (ABCO)	4	Western brackenfern (PTAQ)	3
			Pacific dogwood (CONU4)	2
			Himalaya blackberry (RUDI2)	2
			California honeysuckle (LOHI2)	2
			California wildrose (ROCA2)	1
			White fir (ABCO)	1
			Common snowberry (SYAL)	1
			Ponderosa pine (PIPO)	1
			Orcutt brome (BROR2)	1
			Sugar pine (PILA)	1
Jocal taxadjunct	Ponderosa pine (PIPO)	26	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	20	Incense cedar (CADE27)	5
	Sugar pine (PILA)	17	Douglas-fir (PSME)	5
	Pacific madrone (ARME)	12	Pacific madrone (ARME)	4
	White fir (ABCO)	10	Sugar pine (PILA)	3
	Incense cedar (CADE27)	10	Pacific dogwood (CONU4)	2
	California black oak (QUKE)	5	Western brackenfern (PTAQ)	2
			Sierra gooseberry (RIRO)	2
			White fir (ABCO)	2
			Deerbrush (CEIN3)	1
			California black oak (QUKE)	1
			Orcutt brome (BROR2)	1
			Pipsissewa (CHUM)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
883:				
Sites taxadjunct	Ponderosa pine (PIPO)	34	Deerbrush (CEIN3)	13
	Pacific madrone (ARME)	18	Tanoak (LIDE3)	12
	Douglas-fir (PSME)	17	Douglas-fir (PSME)	7
	Incense cedar (CADE27)	8	Pacific poison oak (TODI)	---
	Sugar pine (PILA)	7	Incense cedar (CADE27)	6
	Tanoak (LIDE3)	7	Pacific madrone (ARME)	6
	California black oak (QUKE)	5	California black oak (QUKE)	4
	White fir (ABCO)	4	Western brackenfern (PTAQ)	3
			Pacific dogwood (CONU4)	2
			Himalaya blackberry (RUDI2)	2
			California honeysuckle (LOHI2)	2
			California wildrose (ROCA2)	1
			White fir (ABCO)	1
			Common snowberry (SYAL)	1
			Ponderosa pine (PIPO)	1
			Orcutt brome (BROR2)	1
			Sugar pine (PILA)	1
Jocal taxadjunct	Ponderosa pine (PIPO)	26	Tanoak (LIDE3)	8
	Douglas-fir (PSME)	20	Incense cedar (CADE27)	5
	Sugar pine (PILA)	17	Douglas-fir (PSME)	5
	Pacific madrone (ARME)	12	Pacific madrone (ARME)	4
	White fir (ABCO)	10	Sugar pine (PILA)	3
	Incense cedar (CADE27)	10	Pacific dogwood (CONU4)	2
	California black oak (QUKE)	5	Western brackenfern (PTAQ)	2
			Sierra gooseberry (RIRO)	2
			White fir (ABCO)	2
			Deerbrush (CEIN3)	1
			California black oak (QUKE)	1
			Orcutt brome (BROR2)	1
			Pipsissewa (CHUM)	1
			Broadleaf starflower (TRBOL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
885:				
Rogerville------	Sugar pine (PILA)	20	Tanoak (LIDE3)	31
	Douglas-fir (PSME)	20	Deerbrush (CEIN3)	5
	Ponderosa pine (PIPO)	16	White fir (ABCO)	5
	White fir (ABCO)	14	Incense cedar (CADE27)	4
	Tanoak (LIDE3)	10	Douglas-fir (PSME)	4
	Pacific madrone (ARME)	8	Sugar pine (PILA)	3
	Incense cedar (CADE27)	7	Western brackenfern (PTAQ)	2
	California black oak (QUKE)	5	California black oak (QUKE)	2
			Broadleaf starflower (TRBOL)	2
			Pacific madrone (ARME)	2
			Whiteleaf manzanita (ARMA)	2
			California hazel (COCOC)	2
			Greenleaf manzanita (ARPA6)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
			Pacific dogwood (CONU4)	1
			Sierra gooseberry (RIRO)	1
886:				
Rogerville------	Sugar pine (PILA)	20	Tanoak (LIDE3)	31
	Douglas-fir (PSME)	20	Deerbrush (CEIN3)	5
	Ponderosa pine (PIPO)	16	White fir (ABCO)	5
	White fir (ABCO)	14	Incense cedar (CADE27)	4
	Tanoak (LIDE3)	10	Douglas-fir (PSME)	4
	Pacific madrone (ARME)	8	Sugar pine (PILA)	3
	Incense cedar (CADE27)	7	Western brackenfern (PTAQ)	2
	California black oak (QUKE)	5	California black oak (QUKE)	2
			Broadleaf starflower (TRBOL)	2
			Pacific madrone (ARME)	2
			Whiteleaf manzanita (ARMA)	2
			California hazel (COCOC)	2
			Greenleaf manzanita (ARPA6)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
			Pacific dogwood (CONU4)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
892:				
Rogerville------	Sugar pine (PILA)	20	Tanoak (LIDE3)	31
	Douglas-fir (PSME)	20	Deerbrush (CEIN3)	5
	Ponderosa pine (PIPO)	16	White fir (ABCO)	5
	White fir (ABCO)	14	Incense cedar (CADE27)	4
	Tanoak (LIDE3)	10	Douglas-fir (PSME)	4
	Pacific madrone (ARME)	8	Sugar pine (PILA)	3
	Incense cedar (CADE27)	7	Western brackenfern (PTAQ)	2
	California black oak (QUKE)	5	California black oak (QUKE)	2
			Broadleaf starflower (TRBOL)	2
			Pacific madrone (ARME)	2
			Whiteleaf manzanita (ARMA)	2
			California hazel (COCOC)	2
			Greenleaf manzanita (ARPA6)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
			Pacific dogwood (CONU4)	1
			Sierra gooseberry (RIRO)	1
893:				
Rogerville------	Sugar pine (PILA)	20	Tanoak (LIDE3)	31
	Douglas-fir (PSME)	20	Deerbrush (CEIN3)	5
	Ponderosa pine (PIPO)	16	White fir (ABCO)	5
	White fir (ABCO)	14	Incense cedar (CADE27)	4
	Tanoak (LIDE3)	10	Douglas-fir (PSME)	4
	Pacific madrone (ARME)	8	Sugar pine (PILA)	3
	Incense cedar (CADE27)	7	Western brackenfern (PTAQ)	2
	California black oak (QUKE)	5	California black oak (QUKE)	2
			Broadleaf starflower (TRBOL)	2
			Pacific madrone (ARME)	2
			Whiteleaf manzanita (ARMA)	2
			California hazel (COCOC)	2
			Greenleaf manzanita (ARPA6)	1
			Orcutt brome (BROR2)	1
			Iris (IRIS)	1
			California wildrose (ROCA2)	1
			Common snowberry (SYAL)	1
			Pacific dogwood (CONU4)	1
			Sierra gooseberry (RIRO)	1
902:				
Lava flows.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
902:				
Lumpkin---	Ponderosa pine (PIPO)	48	Whiteleaf manzanita (ARMA)	10
	Incense cedar (CADE27)	26		
	California black oak (QUKE)	10	Greenleaf manzanita (ARPA6)	8
	Sugar pine (PILA)	7	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	7	Ponderosa pine (PIPO)	4
	White fir (ABCO)	2	White fir (ABCO)	2
			Canyon live oak (QUCH2)	2
			California needlegrass (ACOCC)	1
			Buckwheat (ERIOG)	1
			California black oak (QUKE)	1
			Common snowberry (SYAL)	1
903:				
Mudwash---	White fir (ABCO)	29	White fir (ABCO)	13
	Incense cedar (CADE27)	22	Incense cedar (CADE27)	12
	Ponderosa pine (PIPO)	22	Whitethorn ceanothus (CECO)	5
	Sugar pine (PILA)	11		
	Douglas-fir (PSME)	7	Tanoak (LIDE3)	4
	California black oak (QUKE)	7	Common snowberry (SYAL)	4
			Deerbrush (CEIN3)	3
	Jeffrey pine (PIJE)	1	Sierra gooseberry (RIRO)	3
	Pacific madrone (ARME)	1	Ponderosa pine (PIPO)	3
			California black oak (QUKE)	2
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Whiteleaf manzanita (ARMA)	2
			Douglas-fir (PSME)	1
			Whitevein shinleaf (PYPI2)	1
			Pipsissewa (CHUM)	1
Timberisland---	Ponderosa pine (PIPO)	28	White fir (ABCO)	10
	Incense cedar (CADE27)	27	Deerbrush (CEIN3)	10
	California black oak (QUKE)	13	Incense cedar (CADE27)	8
			Pacific madrone (ARME)	7
	White fir (ABCO)	12	California black oak (QUKE)	7
	Sugar pine (PILA)	10		
	Douglas-fir (PSME)	7	Tanoak (LIDE3)	5
	Pacific madrone (ARME)	2	Huckleberry oak (QUVA)	5
	Canyon live oak (QUCH2)	1	Ponderosa pine (PIPO)	2
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Whitethorn ceanothus (CECO)	2
			Lupine (LUPIN)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	2
			Douglas-fir (PSME)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
903:				
Lavatop---------	Incense cedar (CADE27)	26	Incense cedar (CADE27)	13
	Ponderosa pine (PIPO)	25	Whiteleaf manzanita (ARMA)	8
	White fir (ABCO)	19		
	Douglas-fir (PSME)	10	White fir (ABCO)	8
	California black oak (QUKE)	10	Ponderosa pine (PIPO)	7
			California hazel (COCOC)	4
	Sugar pine (PILA)	9	Pacific dogwood (CONU4)	4
	Canyon live oak (QUCH2)	1	Douglas-fir (PSME)	3
			Greenleaf manzanita (ARPA6)	2
			California black oak (QUKE)	2
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			Deerbrush (CEIN3)	1
			Sugar pine (PILA)	1
904:				
Lava flows.				
Lavatop---------	Incense cedar (CADE27)	26	Incense cedar (CADE27)	13
	Ponderosa pine (PIPO)	25	Whiteleaf manzanita (ARMA)	8
	White fir (ABCO)	19		
	Douglas-fir (PSME)	10	White fir (ABCO)	8
	California black oak (QUKE)	10	Ponderosa pine (PIPO)	7
			California hazel (COCOC)	4
	Sugar pine (PILA)	9	Pacific dogwood (CONU4)	4
	Canyon live oak (QUCH2)	1	Douglas-fir (PSME)	3
			Greenleaf manzanita (ARPA6)	2
			California black oak (QUKE)	2
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Whitevein shinleaf (PYPI2)	1
			Deerbrush (CEIN3)	1
			Sugar pine (PILA)	1
905:				
Lava flows.				
Lumpkin---------	Ponderosa pine (PIPO)	48	Whiteleaf manzanita (ARMA)	10
	Incense cedar (CADE27)	26		
	California black oak (QUKE)	10	Greenleaf manzanita (ARPA6)	8
	Sugar pine (PILA)	7	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	7	Ponderosa pine (PIPO)	4
	White fir (ABCO)	2	White fir (ABCO)	2
			Canyon live oak (QUCH2)	2
			California needlegrass (ACOCC)	1
			Buckwheat (ERIOG)	1
			California black oak (QUKE)	1
			Common snowberry (SYAL)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
906:				
Lava flows.				
Lumpkin---------	Ponderosa pine (PIPO)	48	Whiteleaf manzanita (ARMA)	10
	Incense cedar (CADE27)	26		
	California black oak (QUKE)	10	Greenleaf manzanita (ARPA6)	8
	Sugar pine (PILA)	7	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	7	Ponderosa pine (PIPO)	4
	White fir (ABCO)	2	White fir (ABCO)	2
			Canyon live oak (QUCH2)	2
			California needlegrass (ACOCC)	1
			Buckwheat (ERIOG)	1
			California black oak (QUKE)	1
			Common snowberry (SYAL)	1
911:				
Endoaquolls-----	---	---	Carex (CAREX)	---
			Rush (JUNCU)	---
			Willow (SALIX)	---
			Clover (TRIFO)	---
			Alpine timothy (PHAL2)	---
			Common yarrow (ACMI2)	---
			Ponderosa pine (PIPO)	---
			Incense cedar (CADE27)	---
			Thistle (CIRSI)	---
			California false hellebore (VECAC2)	---
923:				
Powderhouse-----	White fir (ABCO)	46	White fir (ABCO)	8
	California red fir (ABMA)	19	Huckleberry oak (QUVA)	5
	Incense cedar (CADE27)	18	California red fir (ABMA)	4
	Sugar pine (PILA)	6	Greenleaf manzanita (ARPA6)	3
	Ponderosa pine (PIPO)	4		
	Douglas-fir (PSME)	4	Whitethorn ceanothus (CECO)	3
	California black oak (QUKE)	3		
			Incense cedar (CADE27)	3
			Sierra chinquapin (CHSE11)	3
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Pinemat manzanita (ARNE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California black oak (QUKE)	1
			Prostrate ceanothus (CEPR)	1
			California buckthorn (FRCAT2)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra currant (RINE)	1
			Starry false Solomons seal (MAST4)	1
			Bitter cherry (PREM)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
923:				
McNair----------	White fir (ABCO)	50	White fir (ABCO)	15
	Sugar pine (PILA)	13	Whitethorn ceanothus (CECO)	6
	California red fir (ABMA)	10		
	Ponderosa pine (PIPO)	10	Greenleaf manzanita (ARPA6)	6
	Incense cedar (CADE27)	8		
	California black oak (QUKE)	7	Sierra chinquapin (CHSE11)	4
	Jeffrey pine (PIJE)	2	Common snowberry (SYAL)	3
			California buckthorn (FRCAT2)	3
			California red fir (ABMA)	3
			Incense cedar (CADE27)	2
			Bitterbrush (PURSH)	2
			California hazel (COCOC)	2
			California black oak (QUKE)	2
			Starry false Solomons seal (MAST4)	2
			Sugar pine (PILA)	2
			Huckleberry oak (QUVA)	2
			Western brackenfern (PTAQ)	2
			Sierra gooseberry (RIRO)	1
			Pipsissewa (CHUM)	1
			Sierra currant (RINE)	1
			Whitevein shinleaf (PYPI2)	1
Greenwell-------	White fir (ABCO)	48	White fir (ABCO)	10
	Sugar pine (PILA)	14	Incense cedar (CADE27)	7
	Ponderosa pine (PIPO)	11	Huckleberry oak (QUVA)	6
	California red fir (ABMA)	10	Sierra chinquapin (CHSE11)	5
	Incense cedar (CADE27)	10		
	California black oak (QUKE)	5	Whitethorn ceanothus (CECO)	4
	Jeffrey pine (PIJE)	2	Sierra gooseberry (RIRO)	2
			California black oak (QUKE)	2
			Greenleaf manzanita (ARPA6)	2
			Pipsissewa (CHUM)	1
			Starry false Solomons seal (MAST4)	1
			Sugar pine (PILA)	1
			Common snowberry (SYAL)	1
			Western brackenfern (PTAQ)	1
			California red fir (ABMA)	1
			California needlegrass (ACOCC)	1
			California buckthorn (FRCAT2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
924:				
Powderhouse-----	White fir (ABCO)	46	White fir (ABCO)	8
	California red fir (ABMA)	19	Huckleberry oak (QUVA)	5
	Incense cedar (CADE27)	18	California red fir (ABMA)	4
	Sugar pine (PILA)	6	Greenleaf manzanita (ARPA6)	3
	Ponderosa pine (PIPO)	4		
	Douglas-fir (PSME)	4	Whitethorn ceanothus (CECO)	3
	California black oak (QUKE)	3	Incense cedar (CADE27)	3
			Sierra chinquapin (CHSE11)	3
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Pinemat manzanita (ARNE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California black oak (QUKE)	1
			Prostrate ceanothus (CEPR)	1
			California buckthorn (FRCAT2)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra currant (RINE)	1
			Starry false Solomons seal (MAST4)	1
			Bitter cherry (PREM)	1
McNair----------	White fir (ABCO)	50	White fir (ABCO)	15
	Sugar pine (PILA)	13	Whitethorn ceanothus (CECO)	6
	California red fir (ABMA)	10		
	Ponderosa pine (PIPO)	10	Greenleaf manzanita (ARPA6)	6
	Incense cedar (CADE27)	8		
	California black oak (QUKE)	7	Sierra chinquapin (CHSE11)	4
	Jeffrey pine (PIJE)	2	Common snowberry (SYAL)	3
			California buckthorn (FRCAT2)	3
			California red fir (ABMA)	3
			Incense cedar (CADE27)	2
			Bitterbrush (PURSH)	2
			California hazel (COCOC)	2
			California black oak (QUKE)	2
			Starry false Solomons seal (MAST4)	2
			Sugar pine (PILA)	2
			Huckleberry oak (QUVA)	2
			Western brackenfern (PTAQ)	2
			Sierra gooseberry (RIRO)	1
			Pipsissewa (CHUM)	1
			Sierra currant (RINE)	1
			Whitevein shinleaf (PYPI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
924:				
Greenwell-------	White fir (ABCO)	48	White fir (ABCO)	10
	Sugar pine (PILA)	14	Incense cedar (CADE27)	7
	Ponderosa pine (PIPO)	11	Huckleberry oak (QUVA)	6
	California red fir (ABMA)	10	Sierra chinquapin (CHSE11)	5
	Incense cedar (CADE27)	10		
	California black oak (QUKE)	5	Whitethorn ceanothus (CECO)	4
	Jeffrey pine (PIJE)	2	Sierra gooseberry (RIRO)	2
			California black oak (QUKE)	2
			Greenleaf manzanita (ARPA6)	2
			Pipsissewa (CHUM)	1
			Starry false Solomons seal (MAST4)	1
			Sugar pine (PILA)	1
			Common snowberry (SYAL)	1
			Western brackenfern (PTAQ)	1
			California red fir (ABMA)	1
			California needlegrass (ACOCC)	1
			California buckthorn (FRCAT2)	1
925:				
Powderhouse-----	White fir (ABCO)	46	White fir (ABCO)	8
	California red fir (ABMA)	19	Huckleberry oak (QUVA)	5
	Incense cedar (CADE27)	18	California red fir (ABMA)	4
	Sugar pine (PILA)	6	Greenleaf manzanita (ARPA6)	3
	Ponderosa pine (PIPO)	4		
	Douglas-fir (PSME)	4	Whitethorn ceanothus (CECO)	3
	California black oak (QUKE)	3	Incense cedar (CADE27)	3
			Sierra chinquapin (CHSE11)	3
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Pinemat manzanita (ARNE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California black oak (QUKE)	1
			Prostrate ceanothus (CEPR)	1
			California buckthorn (FRCAT2)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra currant (RINE)	1
			Starry false Solomons seal (MAST4)	1
			Bitter cherry (PREM)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
925:				
McNair----------	White fir (ABCO)	50	White fir (ABCO)	15
	Sugar pine (PILA)	13	Whitethorn ceanothus (CECO)	6
	California red fir (ABMA)	10		
	Ponderosa pine (PIPO)	10	Greenleaf manzanita (ARPA6)	6
	Incense cedar (CADE27)	8		
	California black oak (QUKE)	7	Sierra chinquapin (CHSE11)	4
	Jeffrey pine (PIJE)	2	Common snowberry (SYAL)	3
			California buckthorn (FRCAT2)	3
			California red fir (ABMA)	3
			Incense cedar (CADE27)	2
			Bitterbrush (PURSH)	2
			California hazel (COCOC)	2
			California black oak (QUKE)	2
			Starry false Solomons seal (MAST4)	2
			Sugar pine (PILA)	2
			Huckleberry oak (QUVA)	2
			Western brackenfern (PTAQ)	2
			Sierra gooseberry (RIRO)	1
			Pipsissewa (CHUM)	1
			Sierra currant (RINE)	1
			Whitevein shinleaf (PYPI2)	1
Greenwell-------	White fir (ABCO)	48	White fir (ABCO)	10
	Sugar pine (PILA)	14	Incense cedar (CADE27)	7
	Ponderosa pine (PIPO)	11	Huckleberry oak (QUVA)	6
	California red fir (ABMA)	10	Sierra chinquapin (CHSE11)	5
	Incense cedar (CADE27)	10		
	California black oak (QUKE)	5	Whitethorn ceanothus (CECO)	4
	Jeffrey pine (PIJE)	2	Sierra gooseberry (RIRO)	2
			California black oak (QUKE)	2
			Greenleaf manzanita (ARPA6)	2
			Pipsissewa (CHUM)	1
			Starry false Solomons seal (MAST4)	1
			Sugar pine (PILA)	1
			Common snowberry (SYAL)	1
			Western brackenfern (PTAQ)	1
			California red fir (ABMA)	1
			California needlegrass (ACOCC)	1
			California buckthorn (FRCAT2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
930:				
Shakeridge------	White fir (ABCO)	40	White fir (ABCO)	15
	Sugar pine (PILA)	35	Bigleaf maple (ACMA3)	15
	Incense cedar (CADE27)	15	Incense cedar (CADE27)	15
	Ponderosa pine (PIPO)	10	Dogwood (CORNU)	15
			Deerbrush (CEIN3)	5
			California hazel (COCOC)	5
			Sierra gooseberry (RIRO)	5
			California needlegrass (ACOCC)	1
			Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			Western brackenfern (PTAQ)	1
			Common snowberry (SYAL)	1
			Douglas-fir (PSME)	---
			Ponderosa pine (PIPO)	---
			California black oak (QUKE)	---
Timberisland----	Ponderosa pine (PIPO)	28	White fir (ABCO)	10
	Incense cedar (CADE27)	27	Deerbrush (CEIN3)	10
	California black oak (QUKE)	13	Incense cedar (CADE27)	8
	White fir (ABCO)	12	Pacific madrone (ARME)	7
	Sugar pine (PILA)	10	California black oak (QUKE)	7
	Douglas-fir (PSME)	7	Tanoak (LIDE3)	5
	Pacific madrone (ARME)	2	Huckleberry oak (QUVA)	5
	Canyon live oak (QUCH2)	1	Ponderosa pine (PIPO)	2
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Whitethorn ceanothus (CECO)	2
			Lupine (LUPIN)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	2
			Douglas-fir (PSME)	1
			Sierra gooseberry (RIRO)	1
931:				
Shakeridge------	White fir (ABCO)	40	White fir (ABCO)	15
	Sugar pine (PILA)	35	Bigleaf maple (ACMA3)	15
	Incense cedar (CADE27)	15	Incense cedar (CADE27)	15
	Ponderosa pine (PIPO)	10	Dogwood (CORNU)	15
			Deerbrush (CEIN3)	5
			California hazel (COCOC)	5
			Sierra gooseberry (RIRO)	5
			California needlegrass (ACOCC)	1
			Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			Western brackenfern (PTAQ)	1
			Common snowberry (SYAL)	1
			Douglas-fir (PSME)	---
			Ponderosa pine (PIPO)	---
			California black oak (QUKE)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
931:				
Mudwash---------	White fir (ABCO)	29	White fir (ABCO)	13
	Incense cedar (CADE27)	22	Incense cedar (CADE27)	12
	Ponderosa pine (PIPO)	22	Whitethorn ceanothus (CECO)	5
	Sugar pine (PILA)	11	Tanoak (LIDE3)	4
	Douglas-fir (PSME)	7	Common snowberry (SYAL)	4
	California black oak (QUKE)	7	Deerbrush (CEIN3)	3
	Jeffrey pine (PIJE)	1	Sierra gooseberry (RIRO)	3
	Pacific madrone (ARME)	1	Ponderosa pine (PIPO)	3
			California black oak (QUKE)	2
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Whiteleaf manzanita (ARMA)	2
			Douglas-fir (PSME)	1
			Whitevein shinleaf (PYPI2)	1
			Pipsissewa (CHUM)	1
Timberisland----	Ponderosa pine (PIPO)	28	White fir (ABCO)	10
	Incense cedar (CADE27)	27	Deerbrush (CEIN3)	10
	California black oak (QUKE)	13	Incense cedar (CADE27)	8
	White fir (ABCO)	12	Pacific madrone (ARME)	7
	Sugar pine (PILA)	10	California black oak (QUKE)	7
	Douglas-fir (PSME)	7	Tanoak (LIDE3)	5
	Pacific madrone (ARME)	2	Huckleberry oak (QUVA)	5
	Canyon live oak (QUCH2)	1	Ponderosa pine (PIPO)	2
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Whitethorn ceanothus (CECO)	2
			Lupine (LUPIN)	2
			Western brackenfern (PTAQ)	2
			Common snowberry (SYAL)	2
			Douglas-fir (PSME)	1
			Sierra gooseberry (RIRO)	1
932:				
Shakeridge------	White fir (ABCO)	40	White fir (ABCO)	15
	Sugar pine (PILA)	35	Bigleaf maple (ACMA3)	15
	Incense cedar (CADE27)	15	Incense cedar (CADE27)	15
	Ponderosa pine (PIPO)	10	Dogwood (CORNU)	15
			Deerbrush (CEIN3)	5
			California hazel (COCOC)	5
			Sierra gooseberry (RIRO)	5
			California needlegrass (ACOCC)	1
			Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			Western brackenfern (PTAQ)	1
			Common snowberry (SYAL)	1
			Douglas-fir (PSME)	---
			Ponderosa pine (PIPO)	---
			California black oak (QUKE)	---

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
932:				
Mudwash---------	White fir (ABCO)	29	White fir (ABCO)	13
	Incense cedar (CADE27)	22	Incense cedar (CADE27)	12
	Ponderosa pine (PIPO)	22	Whitethorn ceanothus (CECO)	5
	Sugar pine (PILA)	11		
	Douglas-fir (PSME)	7	Tanoak (LIDE3)	4
	California black oak (QUKE)	7	Common snowberry (SYAL)	4
			Deerbrush (CEIN3)	3
	Jeffrey pine (PIJE)	1	Sierra gooseberry (RIRO)	3
	Pacific madrone (ARME)	1	Ponderosa pine (PIPO)	3
			California black oak (QUKE)	2
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Whiteleaf manzanita (ARMA)	2
			Douglas-fir (PSME)	1
			Whitevein shinleaf (PYPI2)	1
			Pipsissewa (CHUM)	1
933:				
Shakeridge------	White fir (ABCO)	40	White fir (ABCO)	15
	Sugar pine (PILA)	35	Bigleaf maple (ACMA3)	15
	Incense cedar (CADE27)	15	Incense cedar (CADE27)	15
	Ponderosa pine (PIPO)	10	Dogwood (CORNU)	15
			Deerbrush (CEIN3)	5
			California hazel (COCOC)	5
			Sierra gooseberry (RIRO)	5
			California needlegrass (ACOCC)	1
			Sugar pine (PILA)	1
			Whitevein shinleaf (PYPI2)	1
			Western brackenfern (PTAQ)	1
			Common snowberry (SYAL)	1
			Douglas-fir (PSME)	---
			Ponderosa pine (PIPO)	---
			California black oak (QUKE)	---
934:				
Mudwash---------	White fir (ABCO)	29	White fir (ABCO)	13
	Incense cedar (CADE27)	22	Incense cedar (CADE27)	12
	Ponderosa pine (PIPO)	22	Whitethorn ceanothus (CECO)	5
	Sugar pine (PILA)	11		
	Douglas-fir (PSME)	7	Tanoak (LIDE3)	4
	California black oak (QUKE)	7	Common snowberry (SYAL)	4
			Deerbrush (CEIN3)	3
	Jeffrey pine (PIJE)	1	Sierra gooseberry (RIRO)	3
	Pacific madrone (ARME)	1	Ponderosa pine (PIPO)	3
			California black oak (QUKE)	2
			Sugar pine (PILA)	2
			Greenleaf manzanita (ARPA6)	2
			Whiteleaf manzanita (ARMA)	2
			Douglas-fir (PSME)	1
			Whitevein shinleaf (PYPI2)	1
			Pipsissewa (CHUM)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
939:				
Fluvaquentic Humaquepts-----	---	---	California false hellebore (VECAC2)	---
			Rush (JUNCU)	---
			Violet (VIOLA)	---
			Arnica (ARNIC)	---
			Mountain alder (ALVIC)	---
			Carex (CAREX)	---
940:				
Dejonah---------	White fir (ABCO)	45	Sierra chinquapin (CHSE11)	10
	California red fir (ABMA)	28	White fir (ABCO)	8
	Sugar pine (PILA)	15	Greenleaf manzanita (ARPA6)	7
	Incense cedar (CADE27)	4	Western brackenfern (PTAQ)	5
	Jeffrey pine (PIJE)	2	California red fir (ABMA)	4
	Ponderosa pine (PIPO)	2	Whitethorn ceanothus (CECO)	3
	Douglas-fir (PSME)	2	Pinemat manzanita (ARNE)	2
	Lodgepole pine (PICO)	1	Incense cedar (CADE27)	2
	California black oak (QUKE)	1	Sierra gooseberry (RIRO)	2
			Pipsissewa (CHUM)	1
			Common snowberry (SYAL)	1
			Huckleberry oak (QUVA)	1
			Pacific dogwood (CONU4)	1
			Wavyleaf Indian paintbrush (CAAP4)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Bitter cherry (PREM)	1
Stagpoint-------	White fir (ABCO)	41	White fir (ABCO)	11
	Sugar pine (PILA)	18	Whitethorn ceanothus (CECO)	8
	California red fir (ABMA)	14	Sierra chinquapin (CHSE11)	8
	Incense cedar (CADE27)	12	Incense cedar (CADE27)	8
	Ponderosa pine (PIPO)	7	Deerbrush (CEIN3)	5
	California black oak (QUKE)	6	California red fir (ABMA)	4
	Jeffrey pine (PIJE)	1	California black oak (QUKE)	3
	Douglas-fir (PSME)	1	Greenleaf manzanita (ARPA6)	2
			Sierra gooseberry (RIRO)	2
			Huckleberry oak (QUVA)	2
			Western brackenfern (PTAQ)	2
			Bitter cherry (PREM)	1
			Common snowberry (SYAL)	1
			California needlegrass (ACOCC)	1
			Sugar pine (PILA)	1
			Pinemat manzanita (ARNE)	1
			Pipsissewa (CHUM)	1
			Pacific dogwood (CONU4)	1
			Whitevein shinleaf (PYPI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
941:				
Dejonah---------	White fir (ABCO)	45	Sierra chinquapin (CHSE11)	10
	California red fir (ABMA)	28		
	Sugar pine (PILA)	15	White fir (ABCO)	8
	Incense cedar (CADE27)	4	Greenleaf manzanita (ARPA6)	7
	Jeffrey pine (PIJE)	2		
	Ponderosa pine (PIPO)	2	Western brackenfern (PTAQ)	5
	Douglas-fir (PSME)	2		
	Lodgepole pine (PICO)	1	California red fir (ABMA)	4
	California black oak (QUKE)	1	Whitethorn ceanothus (CECO)	3
			Pinemat manzanita (ARNE)	2
			Incense cedar (CADE27)	2
			Sierra gooseberry (RIRO)	2
			Pipsissewa (CHUM)	1
			Common snowberry (SYAL)	1
			Huckleberry oak (QUVA)	1
			Pacific dogwood (CONU4)	1
			Wavyleaf Indian paintbrush (CAAP4)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Bitter cherry (PREM)	1
Stagpoint-------	White fir (ABCO)	41	White fir (ABCO)	11
	Sugar pine (PILA)	18	Whitethorn ceanothus (CECO)	8
	California red fir (ABMA)	14		
	Incense cedar (CADE27)	12	Sierra chinquapin (CHSE11)	8
	Ponderosa pine (PIPO)	7		
	California black oak (QUKE)	6	Incense cedar (CADE27)	8
			Deerbrush (CEIN3)	5
	Jeffrey pine (PIJE)	1	California red fir (ABMA)	4
	Douglas-fir (PSME)	1	California black oak (QUKE)	3
			Greenleaf manzanita (ARPA6)	2
			Sierra gooseberry (RIRO)	2
			Huckleberry oak (QUVA)	2
			Western brackenfern (PTAQ)	2
			Bitter cherry (PREM)	1
			Common snowberry (SYAL)	1
			California needlegrass (ACOCC)	1
			Sugar pine (PILA)	1
			Pinemat manzanita (ARNE)	1
			Pipsissewa (CHUM)	1
			Pacific dogwood (CONU4)	1
			Whitevein shinleaf (PYPI2)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
942:				
Stagpoint-------	White fir (ABCO)	41	White fir (ABCO)	11
	Sugar pine (PILA)	18	Whitethorn ceanothus (CECO)	8
	California red fir (ABMA)	14		
	Incense cedar (CADE27)	12	Sierra chinquapin (CHSE11)	8
	Ponderosa pine (PIPO)	7		
	California black oak (QUKE)	6	Incense cedar (CADE27)	8
			Deerbrush (CEIN3)	5
	Jeffrey pine (PIJE)	1	California red fir (ABMA)	4
	Douglas-fir (PSME)	1	California black oak (QUKE)	3
			Greenleaf manzanita (ARPA6)	2
			Sierra gooseberry (RIRO)	2
			Huckleberry oak (QUVA)	2
			Western brackenfern (PTAQ)	2
			Bitter cherry (PREM)	1
			Common snowberry (SYAL)	1
			California needlegrass (ACOCC)	1
			Sugar pine (PILA)	1
			Pinemat manzanita (ARNE)	1
			Pipsissewa (CHUM)	1
			Pacific dogwood (CONU4)	1
			Whitevein shinleaf (PYPI2)	1
Dejonah---------	White fir (ABCO)	45	Sierra chinquapin (CHSE11)	10
	California red fir (ABMA)	28		
	Sugar pine (PILA)	15	White fir (ABCO)	8
	Incense cedar (CADE27)	4	Greenleaf manzanita (ARPA6)	7
	Jeffrey pine (PIJE)	2		
	Ponderosa pine (PIPO)	2	Western brackenfern (PTAQ)	5
	Douglas-fir (PSME)	2		
	Lodgepole pine (PICO)	1	California red fir (ABMA)	4
	California black oak (QUKE)	1	Whitethorn ceanothus (CECO)	3
			Pinemat manzanita (ARNE)	2
			Incense cedar (CADE27)	2
			Sierra gooseberry (RIRO)	2
			Pipsissewa (CHUM)	1
			Common snowberry (SYAL)	1
			Huckleberry oak (QUVA)	1
			Pacific dogwood (CONU4)	1
			Wavyleaf Indian paintbrush (CAAP4)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Bitter cherry (PREM)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
948:				
Stagpoint-------	White fir (ABCO)	41	White fir (ABCO)	11
	Sugar pine (PILA)	18	Whitethorn ceanothus (CECO)	8
	California red fir (ABMA)	14		
	Incense cedar (CADE27)	12	Sierra chinquapin (CHSE11)	8
	Ponderosa pine (PIPO)	7		
	California black oak (QUKE)	6	Incense cedar (CADE27)	8
			Deerbrush (CEIN3)	5
	Jeffrey pine (PIJE)	1	California red fir (ABMA)	4
	Douglas-fir (PSME)	1	California black oak (QUKE)	3
			Greenleaf manzanita (ARPA6)	2
			Sierra gooseberry (RIRO)	2
			Huckleberry oak (QUVA)	2
			Western brackenfern (PTAQ)	2
			Bitter cherry (PREM)	1
			Common snowberry (SYAL)	1
			California needlegrass (ACOCC)	1
			Sugar pine (PILA)	1
			Pinemat manzanita (ARNE)	1
			Pipsissewa (CHUM)	1
			Pacific dogwood (CONU4)	1
			Whitevein shinleaf (PYPI2)	1
Dejonah---------	White fir (ABCO)	45	Sierra chinquapin (CHSE11)	10
	California red fir (ABMA)	28		
	Sugar pine (PILA)	15	White fir (ABCO)	8
	Incense cedar (CADE27)	4	Greenleaf manzanita (ARPA6)	7
	Jeffrey pine (PIJE)	2		
	Ponderosa pine (PIPO)	2	Western brackenfern (PTAQ)	5
	Douglas-fir (PSME)	2		
	Lodgepole pine (PICO)	1	California red fir (ABMA)	4
	California black oak (QUKE)	1	Whitethorn ceanothus (CECO)	3
			Pinemat manzanita (ARNE)	2
			Incense cedar (CADE27)	2
			Sierra gooseberry (RIRO)	2
			Pipsissewa (CHUM)	1
			Common snowberry (SYAL)	1
			Huckleberry oak (QUVA)	1
			Pacific dogwood (CONU4)	1
			Wavyleaf Indian paintbrush (CAAP4)	1
			California black oak (QUKE)	1
			Sugar pine (PILA)	1
			Bitter cherry (PREM)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
949:				
Rogerville taxadjunct-----	White fir (ABCO)	27	White fir (ABCO)	10
	California red fir (ABMA)	20	Incense cedar (CADE27)	10
	Incense cedar (CADE27)	18	Whitethorn ceanothus (CECO)	10
	Douglas-fir (PSME)	12		
	Sugar pine (PILA)	10	California red fir (ABMA)	5
	Jeffrey pine (PIJE)	5	Common snowberry (SYAL)	5
	Ponderosa pine (PIPO)	5	California needlegrass (ACOCC)	3
	California black oak (QUKE)	3	Pinemat manzanita (ARNE)	3
			Sierra chinquapin (CHSE11)	3
			Western brackenfern (PTAQ)	3
			Sierra gooseberry (RIRO)	3
			Deerbrush (CEIN3)	3
			Douglas-fir (PSME)	3
			Huckleberry oak (QUVA)	3
			Rocky Mountain maple (ACGL)	1
			Orcutt brome (BROR2)	1
			Pipsissewa (CHUM)	1
			Pacific dogwood (CONU4)	1
			Bitter cherry (PREM)	1
			Whitevein shinleaf (PYPI2)	1
			California wildrose (ROCA2)	1
			Western thimbleberry (RUPA)	1
950:				
Lumpkin taxadjunct-----	Ponderosa pine (PIPO)	48	Whiteleaf manzanita (ARMA)	10
	Incense cedar (CADE27)	26		
	California black oak (QUKE)	10	Greenleaf manzanita (ARPA6)	8
	Sugar pine (PILA)	7	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	7	Ponderosa pine (PIPO)	4
	White fir (ABCO)	2	White fir (ABCO)	2
			Canyon live oak (QUCH2)	2
			California needlegrass (ACOCC)	1
			Buckwheat (ERIOG)	1
			California black oak (QUKE)	1
			Common snowberry (SYAL)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
950:				
Powderhouse-----	White fir (ABCO)	46	White fir (ABCO)	8
	California red fir (ABMA)	19	Huckleberry oak (QUVA)	5
	Incense cedar (CADE27)	18	California red fir (ABMA)	4
	Sugar pine (PILA)	6	Greenleaf manzanita (ARPA6)	3
	Ponderosa pine (PIPO)	4		
	Douglas-fir (PSME)	4	Whitethorn ceanothus (CECO)	3
	California black oak (QUKE)	3	Incense cedar (CADE27)	3
			Sierra chinquapin (CHSE11)	3
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Pinemat manzanita (ARNE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California black oak (QUKE)	1
			Prostrate ceanothus (CEPR)	1
			California buckthorn (FRCAT2)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra currant (RINE)	1
			Starry false Solomons seal (MAST4)	1
			Bitter cherry (PREM)	1
951:				
Lumpkin taxadjunct-----	Ponderosa pine (PIPO)	48	Whiteleaf manzanita (ARMA)	10
	Incense cedar (CADE27)	26		
	California black oak (QUKE)	10	Greenleaf manzanita (ARPA6)	8
	Sugar pine (PILA)	7	Incense cedar (CADE27)	5
	Canyon live oak (QUCH2)	7	Ponderosa pine (PIPO)	4
	White fir (ABCO)	2	White fir (ABCO)	2
			Canyon live oak (QUCH2)	2
			California needlegrass (ACOCC)	1
			Buckwheat (ERIOG)	1
			California black oak (QUKE)	1
			Common snowberry (SYAL)	1
Rock outcrop.				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
951:				
Powderhouse-----	White fir (ABCO)	46	White fir (ABCO)	8
	California red fir (ABMA)	19	Huckleberry oak (QUVA)	5
	Incense cedar (CADE27)	18	California red fir (ABMA)	4
	Sugar pine (PILA)	6	Greenleaf manzanita (ARPA6)	3
	Ponderosa pine (PIPO)	4		
	Douglas-fir (PSME)	4	Whitethorn ceanothus (CECO)	3
	California black oak (QUKE)	3	Incense cedar (CADE27)	3
			Sierra chinquapin (CHSE11)	3
			Common snowberry (SYAL)	2
			Pipsissewa (CHUM)	1
			Pinemat manzanita (ARNE)	1
			Sugar pine (PILA)	1
			Sierra gooseberry (RIRO)	1
			California black oak (QUKE)	1
			Prostrate ceanothus (CEPR)	1
			California buckthorn (FRCAT2)	1
			Whitevein shinleaf (PYPI2)	1
			Sierra currant (RINE)	1
			Starry false Solomons seal (MAST4)	1
			Bitter cherry (PREM)	1
960:				
Surnuf----------	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	13
	Douglas-fir (PSME)	20	White fir (ABCO)	8
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	7
	Tanoak (LIDE3)	13	Douglas-fir (PSME)	6
	Sugar pine (PILA)	9	Mountain misery (CHFO)	5
	Pacific madrone (ARME)	7	Deerbrush (CEIN3)	3
	White fir (ABCO)	7	California black oak (QUKE)	3
	California black oak (QUKE)	6	Pacific madrone (ARME)	3
			Common snowberry (SYAL)	2
			Whiteleaf manzanita (ARMA)	2
			Pacific dogwood (CONU4)	2
			Orcutt brome (BROR2)	2
			California needlegrass (ACOCC)	2
			Ponderosa pine (PIPO)	1
			California blackberry (RUUR)	1
			Broadleaf starflower (TRBOL)	1
			Western brackenfern (PTAQ)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
961:				
Surnuf----------	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	13
	Douglas-fir (PSME)	20	White fir (ABCO)	8
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	7
	Tanoak (LIDE3)	13	Douglas-fir (PSME)	6
	Sugar pine (PILA)	9	Mountain misery (CHFO)	5
	Pacific madrone (ARME)	7	Deerbrush (CEIN3)	3
	White fir (ABCO)	7	California black oak (QUKE)	3
	California black oak (QUKE)	6	Pacific madrone (ARME)	3
			Common snowberry (SYAL)	2
			Whiteleaf manzanita (ARMA)	2
			Pacific dogwood (CONU4)	2
			Orcutt brome (BROR2)	2
			California needlegrass (ACOCC)	2
			Ponderosa pine (PIPO)	1
			California blackberry (RUUR)	1
			Broadleaf starflower (TRBOL)	1
			Western brackenfern (PTAQ)	1
			Sierra gooseberry (RIRO)	1
962:				
Surnuf----------	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	13
	Douglas-fir (PSME)	20	White fir (ABCO)	8
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	7
	Tanoak (LIDE3)	13	Douglas-fir (PSME)	6
	Sugar pine (PILA)	9	Mountain misery (CHFO)	5
	Pacific madrone (ARME)	7	Deerbrush (CEIN3)	3
	White fir (ABCO)	7	California black oak (QUKE)	3
	California black oak (QUKE)	6	Pacific madrone (ARME)	3
			Common snowberry (SYAL)	2
			Whiteleaf manzanita (ARMA)	2
			Pacific dogwood (CONU4)	2
			Orcutt brome (BROR2)	2
			California needlegrass (ACOCC)	2
			Ponderosa pine (PIPO)	1
			California blackberry (RUUR)	1
			Broadleaf starflower (TRBOL)	1
			Western brackenfern (PTAQ)	1
			Sierra gooseberry (RIRO)	1

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
963:				
Surnuf----------	Ponderosa pine (PIPO)	21	Tanoak (LIDE3)	13
	Douglas-fir (PSME)	20	White fir (ABCO)	8
	Incense cedar (CADE27)	17	Incense cedar (CADE27)	7
	Tanoak (LIDE3)	13	Douglas-fir (PSME)	6
	Sugar pine (PILA)	9	Mountain misery (CHFO)	5
	Pacific madrone (ARME)	7	Deerbrush (CEIN3)	3
	White fir (ABCO)	7	California black oak (QUKE)	3
	California black oak (QUKE)	6	Pacific madrone (ARME)	3
			Common snowberry (SYAL)	2
			Whiteleaf manzanita (ARMA)	2
			Pacific dogwood (CONU4)	2
			Orcutt brome (BROR2)	2
			California needlegrass (ACOCC)	2
			Ponderosa pine (PIPO)	1
			California blackberry (RUUR)	1
			Broadleaf starflower (TRBOL)	1
			Western brackenfern (PTAQ)	1
			Sierra gooseberry (RIRO)	1
990:				
Riverwash-------	---	---	Douglas sagewort (ARDO3)	---
			Fremont cottonwood (POFR2)	---
			Coyote willow (SAEX)	---
991:				
Xerofluvents----	California sycamore (PLRA)	---	White alder (ALRH2)	---
	Fremont cottonwood (POFR2)	---	California sycamore (PLRA)	---
	Foothill pine (PISA2)	---	Willow (SALIX)	---
	Valley oak (QULO)	---	Fremont cottonwood (POFR2)	---
	White alder (ALRH2)	---	Pacific poison oak (TODI)	---
	Willow (SALIX)	---	Valley oak (QULO)	---
			Foothill pine (PISA2)	---
			California laurel (UMCA)	---
			California buckeye (AECA)	---
			California redbud (CEOR9)	---
			California wild grape (VICA5)	---
			Oregon ash (FRLA)	---
			Douglas sagewort (ARDO3)	---
			Scotch broom (CYSC4)	---
			Yellow starthistle (CESO3)	---
			Vetch (VICIA)	---
995. Pits, gravel				
996. Dumps, excavated material				
997. Pits				

Table 12.--Characteristic Vegetation Composition Based on Percent Cover by Abundance--Continued

Map symbol and soil name	Overstory vegetation >15 feet in height	Percent cover by species	Understory vegetation <15 feet in height	Percent cover by species
998. Dumps, landfill				
999. Water				
DAM. Dam, manmade				

Table 13.--Index of Common and Scientific Plant Names and Plant Symbols

(This table aids in correct plant identification and serves as a cross-reference to plant species listed in table 12. The plant synonymy as reported in the USDA-NRCS National Plants Database at the time of publication is used)

Local common name	Scientific name	Plant symbol
Alameda County thistle	Cirsium quercetorum	CIQU2
alpine timothy	Phleum alpinum	PHAL2
annual lupine	Lupinus bicolor	LUBI
Arizona cypress	Cupressus arizonica	CUAR
arnica	Arnica spp.	ARNIC
arroyo willow	Salix lasiolepis	SALA6
athel	Tamarix articulata	TAAR3
Bailey acacia	Acacia baileyana	ACBA
baldcypress	Taxodium distichum	TADI2
barbed goatgrass	Aegilops triuncialis	AETR
beardless wildrye	Leymus triticoides	LETR5
beggartick (sticktights)	Bidens frondosa	BIFR
bermudagrass	Cynodon dactylon	CYDA
big saltbush	Atriplex lentiformis	ATLE
bigleaf maple	Acer macrophyllum	ACMA3
bitter cherry	Prunus emarginata	PREM
bitterbrush	Purshia spp.	PURSH
black walnut	Juglans nigra	JUNI
blackberry	Rubus spp.	RUBUS
blue elderberry	Sambucus nigra ssp. cerulea	SANIC5
blue oak	Quercus douglasii	QUDO
blue wildrye	Elymus glaucus	ELGL
bluedicks	Dichelostemma capitatum ssp. capitatum	DICAC5
bluegrass	Poa spp.	POA
bluestars	Brodiaea minor	BRMI3
bottlebrush squirreltail	Elymus elymoides	ELEL5
broadleaf starflower	Trientalis borealis ssp. latifolia	TRBOL
brodiaea	Brodiaea spp.	BRODI
brome	Bromus spp.	BROMU
buckbrush	Ceanothus cuneatus	CECU
buckwheat	Eriogonum spp.	ERIOG
bulrush	Scirpus ssp.	SCIRP
burclover	Medicago hispida	MEHI
butter-n-eggs	Triphysaria eriantha ssp. eriantha	TRERE2
buttercup	Ranunculus spp.	RANUN
calicoflower	Downingia spp.	DOWNI
California black oak	Quercus kelloggii	QUKE
California blackberry	Rubus ursinus	RUUR
California buckeye	Aesculus californica	AECA
California buckthorn	Frangula californica ssp. californica	FRCAC5
California buckthorn	Frangula californica ssp. tomentella	FRCAT2
California false hellebore	Veratrum californicum var. californicum	VECAC2
California hazel	Corylus cornuta var. californica	COCOC
California honeysuckle	Lonicera hispidula	LOHI2
California laurel	Umbellularia californica	UMCA
California needlegrass	Achnatherum occidentale ssp. californicum	ACOCC
California red fir	Abies magnifica	ABMA
California redbud	Cercis orbiculata	CEOR9
California scrub oak	Quercus dumosa	QUDU
California sycamore	Platanus racemosa	PLRA
California torreya	Torreya californica	TOCA
California walnut	Juglans californica	JUCA
California wild grape	Vitis californica	VICA5
California wildrose	Rosa californica	ROCA2
canyon live oak	Quercus chrysolepis	QUCH2
carex	Carex spp.	CAREX
cattail	Typha spp.	TYPHA
chamise	Adenostoma fasciculatum	ADFA

Table 13.--Index of Common and Scientific Plant Names and Plant Symbols--Continued

Local common name	Scientific name	Plant symbol
chapparal coffeeberry	Frangula californica	FRCA12
cheatgrass	Bromus tectorum	BRTE
checkerbloom	Sidalcea spp.	SIDAL
Chinese pistache	Pistacia chinensis	PICH4
chokeberry	Photinia spp.	PHOTI
clover	Trifolium spp.	TRIFO
club moss	Lycopodium cernuum	LYCE
cocklebur	Xanthium ssp.	XANTH2
columbine	Aquilegia spp.	AQUIL
common buttonbush	Cephalanthus occidentalis	CEOC2
common snowberry	Symphoricarpos albus	SYAL
common yarrow	Achillea millefolium	ACMI2
cottonwood	Populus spp.	POPUL
cowbag clover	Trifolium depauperatum	TRDE
coyote thistle	Eryngium castrense	ERCA33
coyote willow	Salix exigua	SAEX
coyotebrush	Baccharis pilularis	BAPI
creeping sage	Salvia sonomensis	SASO
curly dock	Rumex crispus	RUCR
dallisgrass	Paspalum dilatatum	PADI3
dandelion	Taraxacum spp.	TARAX
deerbrush	Ceanothus integerrimus	CEIN3
deergrass	Muhlenbergia rigens	MURI2
dogwood	Cornus spp.	CORNU
Douglas sagewort	Artemisia douglasiana	ARDO3
Douglas-fir	Pseudotsuga menziesii	PSME
eucalyptus	Eucalyptus spp.	EUCAL
fescue	Festuca spp.	FESTU
fiddleneck	Amsinckia spp.	AMSIN
filaree	Erodium spp.	ERODI
Fitch's spikeweed	Hemizonia fitchii	HEFI
flatspine stickweed	Lappula occidentalis var. occidentalis	LAOCO
foothill pine	Pinus sabiniana	PISA2
forsythia	Forsythia spp.	FORSY
fourwing saltbush	Atriplex canescens	ATCA2
foxtail fescue	Festuca megalura	FEME
Fremont cottonwood	Populus fremontii	POFR2
Fremont's deathcamas	Zigadenus fremontii	ZIFR
Fremont's tidytips	Layia fremontii	LAFR2
golden willow	Salix alba var. vitellina	SAALV
goldfields	Lasthenia spp.	LASTH
greenleaf manzanita	Arctostaphylos patula	ARPA6
hackberry	Celtis occidentalis	CEOC
hairgrass	Deschampsia	DESCH
hairypink	Petrorhagia dubia	PEDU2
Hansen's spikemoss	Selaginella hansenii	SEHA2
hardstem tule	Scirpus acutus var. occidentalis	SCACO4
hayfield tarweed	Hemizonia congesta ssp. luzulifolia	HECOL3
hedgehog dogtail	Cynosurus echinatus	CYEC
Himalaya blackberry	Rubus discolor	RUDI2
hollyleaf cherry	Prunus ilicifolia	PRIL
huckleberry oak	Quercus vacciniifolia	QUVA
incense cedar	Calocedrus decurrens	CADE27
interior live oak	Quercus wislizeni	QUWI2
iris	Iris spp.	IRIS
Italian ryegrass	Lolium perenne ssp. multiflorum	LOPEM2
Jeffrey pine	Pinus jeffreyi	PIJE
Jepson ceanothus	Ceanothus jepsonii	CEJE
Johnsongrass	Sorghum halepense	SOHA
junegrass	Koeleria macrantha	KOMA
larkspur	Delphinium spp.	DELPH
leather oak	Quercus durata	QUDU4
Lemmon ceanothus	Ceanothus lemmonii	CELE

Table 13.--Index of Common and Scientific Plant Names and Plant Symbols--Continued

Local common name	Scientific name	Plant symbol
lodgepole pine	Pinus contorta	PICO
lupine	Lupinus spp.	LUPIN
manzanita	Arctostaphylos spp.	ARCTO3
mariposa lily	Calochortus spp.	CALOC
meadow barley	Hordeum brachyantherum	HOBR2
meadowfoam	Limnanthes spp.	LIMNA
Mediterranean barley	Hordeum murinum ssp. leporinum	HOMUL
medusahead	Taeniatherum caput-medusae	TACA8
miners lettuce	Claytonia perfoliata	CLPE
mint	Mentha spp.	MENTH
monkeyflower	Mimulus spp.	MIMUL
mountain alder	Alnus viridis ssp. crispa	ALVIC
mountain brome	Bromus marginatus	BRMA4
mountain misery	Chamaebatia foliolosa	CHFO
mouse barley	Hordeum marinum ssp. gussonianum	HOMAG
mulberry	Morus spp.	MORUS
mullein	Verbascum spp.	VERBA
mustard	Brassica spp.	BRASS2
navarretia	Navarretia spp.	NAVAR
nitgrass	Gastridium ventricosum	GAVE3
oak	Quercus spp.	QUERC
oleander	Nerium oleander	NEOL
olive	Olea europaea	OLEU
orchardgrass	Dactylis glomerata	DAGL
Orcutt brome	Bromus orcuttianus	BROR2
Oregon ash	Fraxinus latifolia	FRLA
Pacific dogwood	Cornus nuttallii	CONU4
Pacific madrone	Arbutus menziesii	ARME
Pacific poison oak	Toxicodendron diversilobum	TODI
pepperweed	Lepidium spp.	LEPID
pinemat manzanita	Arctostaphylos nevadensis	ARNE
pink escallonia	Escallonia laevis	ESRU4
pipsissewa	Chimaphila umbellata	CHUM
plantain	Plantago spp.	PLANT
pomegranate	Punica granatum	PUGR2
ponderosa pine	Pinus ponderosa	PIPO
popcornflower	Plagiobothrys	PLAGI
prickly lettuce	Lactuca serriola	LASE
prostrate ceanothus	Ceanothus prostratus	CEPR
purple clarkia	Clarkia purpurea	CLPU2
purple needlegrass	Nassella pulchra	NAPU4
Pursh's buckthorn	Frangula purshiana	FRPU7
ragweed	Ambrosia spp.	AMBRO
rattlesnake brome	Bromus briziformis	BRBR5
red brome	Bromus rubens	BRRU2
red clover	Trifolium pratense	TRPR2
redbud	Cercis spp.	CERCI2
ripgut brome	Bromus diandrus	BRDI3
Rocky Mountain maple	Acer glabrum	ACGL
rose clover	Trifolium hirtum	TRHI4
rush	Juncus spp.	JUNCU
Russian olive	Elaeagnus angustifolia	ELAN
ryegrass	Lolium spp.	LOLIU
saltgrass	Distichlis ssp.	DISTI
Scotch broom	Cytisus scoparius	CYSC4
scrub oak	Quercus berberidifolia	QUBE5
shootingstar	Dodecatheon spp.	DODEC
shrub tanoak	Lithocarpus densiflorus var. echinoides	LIDEE
Sierra chinquapin	Chrysolepis sempervirens	CHSE11
Sierra coffeeberry	Frangula rubra ssp. rubra	FRRUR
Sierra currant	Ribes nevadense	RINE
Sierra gooseberry	Ribes roezlii	RIRO

Table 13.--Index of Common and Scientific Plant Names and Plant Symbols--Continued

Local common name	Scientific name	Plant symbol
Sierra mock stonecrop	Sedella pumila	SEPU4
silver hairgrass	Aira caryophyllea	AICA
soap plant	Chlorogalum spp.	CHLOR3
soft blow wives	Achyrachaena mollis	ACMO2
soft chess	Bromus hordeaceus ssp. hordeaceus	BRHOH
spikerush	Eleocharis spp.	ELEOC
squirreltail	Elymus elymoides ssp. californicus	ELELC2
starry false Solomons seal	Maianthemum stellatum	MAST4
sticky whiteleaf manzanita	Arctostaphylos viscida	ARVI4
sugar pine	Pinus lambertiana	PILA
swampgrass	Crypsis schoenoides	CRSC
tall Oregon grape	Mahonia aquifolium	MAAQ2
tanoak	Lithocarpus densiflorus	LIDE3
tarweed	Hemizonia spp.	HEMIZ
thistle	Cirsium spp.	CIRSI
toyon	Heteromeles arbutifolia	HEAR5
valley oak	Quercus lobata	QULO
vetch	Vicia spp.	VICIA
vinegarweed	Trichostema lanceolatum	TRLA4
violet	Viola spp.	VIOLA
wavyleaf Indian paintbrush	Castilleja applegatei	CAAP4
wax currant	Ribes cereum	RICE
western brackenfern	Pteridium aquilinum	PTAQ
western princes pine	Chimaphila umbellata ssp. occidentalis	CHUMO2
western thimbleberry	Rubus parviflorus	RUPA
wheatgrass	Agropyron spp.	AGROP2
white alder	Alnus rhombifolia	ALRH2
white brodiaea	Triteleia hyacinthina	TRHY3
white fir	Abies concolor	ABCO
white meadowfoam	Limnanthes alba ssp. alba	LIALA
whiteleaf manzanita	Arctostaphylos manzanita	ARMA
whitethorn ceanothus	Ceanothus cordulatus	CECO
whitevein shinleaf	Pyrola picta	PYPI2
wild oat	Avena fatua	AVFA
wild onion	Allium spp.	ALLIU
wildrye	Elymus spp.	ELYMU
willow	Salix spp.	SALIX
woodland strawberry	Fragaria vesca	FRVE
wooly marbles	Psilocarphus spp.	PSILO
yellow carpet	Blennosperma nanum var. nanum	BLNAN
yellow salsify	Tragopogon dubius	TRDU
yellow starthistle	Centaurea solstitialis	CESO3
yerba santa	Eriodictyon spp.	ERIOD

Table 14.--Index of Plant Symbols and Common and Scientific Plant Names

(This table aids in correct plant identification and serves as a cross-reference to plant species listed in table 12. The plant synonymy as reported in the USDA-NRCS National Plants Database at the time of publication is used)

Plant symbol	Local common name	Scientific name
ABCO	white fir	Abies concolor
ABMA	California red fir	Abies magnifica
ACBA	Bailey acacia	Acacia baileyana
ACGL	Rocky Mountain maple	Acer glabrum
ACMA3	bigleaf maple	Acer macrophyllum
ACMI2	common yarrow	Achillea millefolium
ACMO2	soft blow wives	Achyrachaena mollis
ACOCC	California needlegrass	Achnatherum occidentale ssp. californicum
ADFA	chamise	Adenostoma fasciculatum
AECA	California buckeye	Aesculus californica
AETR	barbed goatgrass	Aegilops triuncialis
AGROP2	wheatgrass	Agropyron spp.
AICA	silver hairgrass	Aira caryophyllea
ALLIU	wild onion	Allium spp.
ALRH2	white alder	Alnus rhombifolia
ALVIC	mountain alder	Alnus viridis ssp. crispa
AMBRO	ragweed	Ambrosia spp.
AMSIN	fiddleneck	Amsinckia spp.
AQUIL	columbine	Aquilegia spp.
ARCTO3	manzanita	Arctostaphylos spp.
ARDO3	Douglas sagewort	Artemisia douglasiana
ARMA	whiteleaf manzanita	Arctostaphylos manzanita
ARME	Pacific madrone	Arbutus menziesii
ARNE	pinemat manzanita	Arctostaphylos nevadensis
ARNIC	arnica	Arnica spp.
ARPA6	greenleaf manzanita	Arctostaphylos patula
ARVI4	sticky whiteleaf manzanita	Arctostaphylos viscida
ATCA2	fourwing saltbush	Atriplex canescens
ATLE	big saltbush	Atriplex lentiformis
AVFA	wild oat	Avena fatua
BAPI	coyotebrush	Baccharis pilularis
BIFR	beggartick (sticktights)	Bidens frondosa
BLNAN	yellow carpet	Blennosperma nanum var. nanum
BRASS2	mustard	Brassica spp.
BRBR5	rattlesnake brome	Bromus briziformis
BRDI3	ripgut brome	Bromus diandrus
BRHOH	soft chess	Bromus hordeaceus ssp. hordeaceus
BRMA4	mountain brome	Bromus marginatus
BRMI3	bluestars	Brodiaea minor
BRODI	brodiaea	Brodiaea spp.
BROMU	brome	Bromus spp.
BROR2	Orcutt brome	Bromus orcuttianus
BRRU2	red brome	Bromus rubens
BRTE	cheatgrass	Bromus tectorum
CAAP4	wavyleaf Indian paintbrush	Castilleja applegatei
CADE27	incense cedar	Calocedrus decurrens
CALOC	mariposa lily	Calochortus spp.
CAREX	carex	Carex spp.
CECO	whitethorn ceanothus	Ceanothus cordulatus
CECU	buckbrush	Ceanothus cuneatus
CEIN3	deerbrush	Ceanothus integerrimus
CEJE	Jepson ceanothus	Ceanothus jepsonii
CELE	Lemmon ceanothus	Ceanothus lemmonii
CEOC	hackberry	Celtis occidentalis
CEOC2	common buttonbush	Cephalanthus occidentalis
CEOR9	California redbud	Cercis orbiculata
CEPR	prostrate ceanothus	Ceanothus prostratus
CERCI2	redbud	Cercis spp.
CESO3	yellow starthistle	Centaurea solstitialis

Table 14.--Index of Plant Symbols and Common and Scientific Plant Names--Continued

Plant symbol	Local common name	Scientific name
CHFO	mountain misery	Chamaebatia foliolosa
CHLOR3	soap plant	Chlorogalum spp.
CHSE11	Sierra chinquapin	Chrysolepis sempervirens
CHUM	pipsissewa	Chimaphila umbellata
CHUMO2	western princes pine	Chimaphila umbellata ssp. occidentalis
CIQU2	Alameda County thistle	Cirsium quercetorum
CIRSI	thistle	Cirsium spp.
CLPE	miners lettuce	Claytonia perfoliata
CLPU2	purple clarkia	Clarkia purpurea
COCOC	California hazel	Corylus cornuta var. californica
CONU4	Pacific dogwood	Cornus nuttallii
CORNU	dogwood	Cornus spp.
CRSC	swampgrass	Crypsis schoenoides
CUAR	Arizona cypress	Cupressus arizonica
CYDA	bermudagrass	Cynodon dactylon
CYEC	hedgehog dogtail	Cynosurus echinatus
CYSC4	Scotch broom	Cytisus scoparius
DAGL	orchardgrass	Dactylis glomerata
DELPH	larkspur	Delphinium spp.
DESCH	hairgrass	Deschampsia
DICAC5	bluedicks	Dichelostemma capitatum ssp. capitatum
DISTI	saltgrass	Distichlis ssp.
DODEC	shootingstar	Dodecatheon spp.
DOWNI	calicoflower	Downingia spp.
ELAN	Russian olive	Elaeagnus angustifolia
ELEL5	bottlebrush squirreltail	Elymus elymoides
ELELC2	squirreltail	Elymus elymoides ssp. californicus
ELEOC	spikerush	Eleocharis spp.
ELGL	blue wildrye	Elymus glaucus
ELYMU	wildrye	Elymus spp.
ERCA33	coyote thistle	Eryngium castrense
ERIOD	yerba santa	Eriodictyon spp.
ERIOG	buckwheat	Eriogonum spp.
ERODI	filaree	Erodium spp.
ESRU4	pink escallonia	Escallonia laevis
EUCAL	eucalyptus	Eucalyptus spp.
FEME	foxtail fescue	Festuca megalura
FESTU	fescue	Festuca spp.
FORSY	forsythia	Forsythia spp.
FRCA12	chapparal coffeeberry	Frangula californica
FRCAC5	California buckthorn	Frangula californica ssp. californica
FRCAT2	California buckthorn	Frangula californica ssp. tomentella
FRLA	Oregon ash	Fraxinus latifolia
FRPU7	Pursh's buckthorn	Frangula purshiana
FRRUR	Sierra coffeeberry	Frangula rubra ssp. rubra
FRVE	woodland strawberry	Fragaria vesca
GAVE3	nitgrass	Gastridium ventricosum
HEAR5	toyon	Heteromeles arbutifolia
HECOL3	hayfield tarweed	Hemizonia congesta ssp. luzulifolia
HEFI	Fitch's spikeweed	Hemizonia fitchii
HEMIZ	tarweed	Hemizonia spp.
HOBR2	meadow barley	Hordeum brachyantherum
HOMAG	mouse barley	Hordeum marinum ssp. gussonianum
HOMUL	Mediterranean barley	Hordeum murinum ssp. leporinum
IRIS	iris	Iris spp.
JUCA	California walnut	Juglans californica
JUNCU	rush	Juncus spp.
JUNI	black walnut	Juglans nigra
KOMA	junegrass	Koeleria macrantha
LAFR2	Fremont's tidytips	Layia fremontii
LAOCO	flatspine stickweed	Lappula occidentalis var. occidentalis
LASE	prickly lettuce	Lactuca serriola
LASTH	goldfields	Lasthenia spp.

Table 14.--Index of Plant Symbols and Common and Scientific Plant Names--Continued

Plant symbol	Local common name	Scientific name
LEPID	pepperweed	Lepidium spp.
LETR5	beardless wildrye	Leymus triticoides
LIALA	white meadowfoam	Limnanthes alba ssp. alba
LIDE3	tanoak	Lithocarpus densiflorus
LIDEE	shrub tanoak	Lithocarpus densiflorus var. echinoides
LIMNA	meadowfoam	Limnanthes spp.
LOHI2	California honeysuckle	Lonicera hispidula
LOLIU	ryegrass	Lolium spp.
LOPEM2	Italian ryegrass	Lolium perenne ssp. multiflorum
LUBI	annual lupine	Lupinus bicolor
LUPIN	lupine	Lupinus spp.
LYCE	club moss	Lycopodium cernuum
MAAQ2	tall Oregon grape	Mahonia aquifolium
MAST4	starry false Solomons seal	Maianthemum stellatum
MEHI	burclover	Medicago hispida
MENTH	mint	Mentha spp.
MIMUL	monkeyflower	Mimulus spp.
MORUS	mulberry	Morus spp.
MURI2	deergrass	Muhlenbergia rigens
NAPU4	purple needlegrass	Nassella pulchra
NAVAR	navarretia	Navarretia spp.
NEOL	oleander	Nerium oleander
OLEU	olive	Olea europaea
PADI3	dallisgrass	Paspalum dilatatum
PEDU2	hairypink	Petrorhagia dubia
PHAL2	alpine timothy	Phleum alpinum
PHOTI	chokeberry	Photinia spp.
PICH4	Chinese pistache	Pistacia chinensis
PICO	lodgepole pine	Pinus contorta
PIJE	Jeffrey pine	Pinus jeffreyi
PILA	sugar pine	Pinus lambertiana
PIPO	ponderosa pine	Pinus ponderosa
PISA2	foothill pine	Pinus sabiniana
PLAGI	popcornflower	Plagiobothrys
PLANT	plantain	Plantago spp.
PLRA	California sycamore	Platanus racemosa
POA	bluegrass	Poa spp.
POFR2	Fremont cottonwood	Populus fremontii
POPUL	cottonwood	Populus spp.
PREM	bitter cherry	Prunus emarginata
PRIL	hollyleaf cherry	Prunus ilicifolia
PSILO	wooly marbles	Psilocarphus spp.
PSME	Douglas-fir	Pseudotsuga menziesii
PTAQ	western brackenfern	Pteridium aquilinum
PUGR2	pomegranate	Punica granatum
PURSH	bitterbrush	Purshia spp.
PYPI2	whitevein shinleaf	Pyrola picta
QUBE5	scrub oak	Quercus berberidifolia
QUCH2	canyon live oak	Quercus chrysolepis
QUDO	blue oak	Quercus douglasii
QUDU	California scrub oak	Quercus dumosa
QUDU4	leather oak	Quercus durata
QUERC	oak	Quercus spp.
QUKE	California black oak	Quercus kelloggii
QULO	valley oak	Quercus lobata
QUVA	huckleberry oak	Quercus vacciniifolia
QUWI2	interior live oak	Quercus wislizeni
RANUN	buttercup	Ranunculus spp.
RICE	wax currant	Ribes cereum
RINE	Sierra currant	Ribes nevadense
RIRO	Sierra gooseberry	Ribes roezlii
ROCA2	California wildrose	Rosa californica
RUBUS	blackberry	Rubus spp.

Table 14.--Index of Plant Symbols and Common and Scientific Plant Names--Continued

Plant symbol	Local common name	Scientific name
RUCR	curly dock	Rumex crispus
RUDI2	Himalaya blackberry	Rubus discolor
RUPA	western thimbleberry	Rubus parviflorus
RUUR	California blackberry	Rubus ursinus
SAALV	golden willow	Salix alba var. vitellina
SAEX	coyote willow	Salix exigua
SALA6	arroyo willow	Salix lasiolepis
SALIX	willow	Salix spp.
SANIC5	blue elderberry	Sambucus nigra ssp. cerulea
SASO	creeping sage	Salvia sonomensis
SCACO4	hardstem tule	Scirpus acutus var. occidentalis
SCIRP	bulrush	Scirpus ssp.
SEHA2	Hansen's spikemoss	Selaginella hansenii
SEPU4	Sierra mock stonecrop	Sedella pumila
SIDAL	checkerbloom	Sidalcea spp.
SOHA	Johnsongrass	Sorghum halepense
SYAL	common snowberry	Symphoricarpos albus
TAAR3	athel	Tamarix articulata
TACA8	medusahead	Taeniatherum caput-medusae
TADI2	baldcypress	Taxodium distichum
TARAX	dandelion	Taraxacum spp.
TOCA	California torreya	Torreya californica
TODI	Pacific poison oak	Toxicodendron diversilobum
TRBOL	broadleaf starflower	Trientalis borealis ssp. latifolia
TRDE	cowbag clover	Trifolium depauperatum
TRDU	yellow salsify	Tragopogon dubius
TRERE2	butter-n-eggs	Triphysaria eriantha ssp. eriantha
TRHI4	rose clover	Trifolium hirtum
TRHY3	white brodiaea	Triteleia hyacinthina
TRIFO	clover	Trifolium spp.
TRLA4	vinegarweed	Trichostema lanceolatum
TRPR2	red clover	Trifolium pratense
TYPHA	cattail	Typha spp.
UMCA	California laurel	Umbellularia californica
VECAC2	California false hellebore	Veratrum californicum var. californicum
VERBA	mullein	Verbascum spp.
VICA5	California wild grape	Vitis californica
VICIA	vetch	Vicia spp.
VIOLA	violet	Viola spp.
XANTH2	cocklebur	Xanthium ssp.
ZIFR	Fremont's deathcamas	Zigadenus fremontii

Table 15a.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite inves
in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The ra
limitation with the highest value. Only the three highest value limitations are listed. There may be more limita
fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the ab
describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
100:						
Anita clay	60	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation <
		Flooding >= rare	1.00	Depth to pan <= 20"	1.00	Ponding (any
		Depth to pan <= 20"	1.00	Ponding (any duration)	1.00	Surface clay
Galt clay	25	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation <
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface clay
104:						
Bosquejo clay	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface clay
		Surface clay >= 40%	1.00	Permeability .06-.6"/hr	0.50	Permeability
105:						
Busacca clay loam	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Permeability .06-.6"/hr	0.10	Permeability
		Permeability .06-.6"/hr	0.10			
108:						
Tuscan gravelly loam	45	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation <
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Surface frag
		Dusty	0.50	Dusty	0.50	>25%
						Dusty
Igo gravelly loam	20	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation <
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Surface frag
		Dusty	0.50	Dusty	0.50	>25%
						Dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
108:						
Anita clay----------	15	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation <
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Surface clay
109:						
Bosquejo clay loam------	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Permeability .06-.6"/hr	0.49	Permeability
		Permeability .06-.6"/hr	0.49			
110:						
Bosquejo silt loam, overwash, occasionally flooded----------	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Dusty	0.50	Occasional f
		Dusty	0.50	Permeability .06-.6"/hr	0.40	Dusty
111yu:						
Auburn loam----------	40	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Slopes > 6%
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Bedrock dept
		Dusty	0.50	Dusty	0.50	Dusty
Sobrante loam----------	40	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface frag
						25%
						Dusty
114yu:						
Auburn gravelly loam----	40	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Slopes > 6%
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Bedrock dept
		Dusty	0.50	Dusty	0.50	Surface frag
						>25%
Sobrante gravelly loam--	40	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface frag
		Fragments (<3") 25-50%	0.26	Fragments (<3") 25-50%	0.26	>25%
						Dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
118:						
Xerorthents, tailings---	80	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Fragments (<3") > 50%	1.00	Surface frag
		Fragments (<3") > 50%	1.00			>25%
						Occasional f
						Fragments >3
118co:						
Clear Lake clay, frequently flooded-----	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Surface clay >= 40%	1.00	Flooding > o
		Surface clay >= 40%	1.00	Frequent flooding	0.50	Surface clay
		Permeability .06-.6"/hr	0.44	Permeability .06-.6"/hr	0.44	Permeability
119:						
Xerorthents, tailings---	70	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Fragments (<3") > 50%	1.00	Surface frag
		Fragments (<3") > 50%	1.00			>25%
						Occasional f
						Fragments >3
Urban land----------	30	Not rated		Not rated		Not rated
119yu:						
Auburn gravelly loam----	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dept
		Dusty	0.50	Dusty	0.50	Surface frag
						>25%
Sobrante gravelly loam--	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface frag
		Fragments (<3") 25-50%	0.26	Fragments (<3") 25-50%	0.26	>25%
						Dusty
Rock outcrop----------	20	Not rated		Not rated		Not rated

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
120:						
Gridley taxadjunct clay loam	80	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation
		Flooding >= rare	1.00	Depth to pan <= 20"	0.99	Ponding (an
		Ponding (any duration)	1.00	Saturation from 12 to 30" depth	0.94	Permeabilit
121:						
Boga loam	45	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Dusty	0.50	Dusty	0.50	Dusty
Loemstone loam	40	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Dusty	0.50	Dusty	0.50	Dusty
121su:						
Columbia fine sandy loam, frequently flooded	80	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Frequent flooding	0.50	Flooding >
		Surface sand fractions 70-90% by wt.	0.01	Surface sand fractions 70-90% by wt.	0.01	Surface san 90% by wt.
125:						
Gridley taxadjunct loam	65	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation
		Flooding >= rare	1.00	Depth to pan between 20 and 40"	0.97	Ponding (an
		Ponding (any duration)	1.00			Dusty
				Saturation from 12 to 30" depth	0.94	
Calcic Haploxerolls sandy loam	20	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Surface EC 4-8 mmhos/cm	0.50	Surface EC
		Surface EC 6 to 8 mmhos/cm	0.50	Surface SAR between 8-13	0.32	Surface SAR
126:						
Liveoak sandy loam	85	No limitations		No limitations		No limitation

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
127:						
Gridley taxadjunct loam	85	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation
		Flooding >= rare	1.00	Depth to pan between 20 and 40"	0.97	Ponding (an
		Ponding (any duration)	1.00			Dusty
				Saturation from 12 to 30"	0.94	
130:						
Eastbiggs loam----------	80	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation from 12 to 30" depth	0.96	Saturation
		Depth to pan between 20 and 40"	0.71			Dusty
		Dusty	0.50	Depth to pan between 20 and 40"	0.71	Permeabilit
				Dusty	0.50	
133:						
Eastbiggs loam----------	50	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation from 12 to 30" depth	0.96	Saturation
		Depth to pan between 20 and 40"	0.71			Dusty
		Dusty	0.50	Depth to pan between 20 and 40"	0.71	Permeabilit
				Dusty	0.50	
Galt clay loam----------	40	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Depth to pan between 20 and 40"	0.46	Depth to pan between 20 and 40"	0.46	Permeabilit
136:						
Duric Xerarents, cut----	35	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Permeabilit
Duric Xerarents, fill---	30	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Permeability .06-.6"/hr	0.40	Permeability .06-.6"/hr	0.40	Permeabilit

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
136:						
Eastbiggs fine sandy loam, leveled----------	25	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation
		Ponding (any duration)	1.00	Saturation from 12 to 30" depth	0.96	Ponding (an
		Depth to pan between 20 and 40"	0.46	Depth to pan between 20 and 40"	0.46	Permeabilit
138su:						
Liveoak sandy clay loam	85	No limitations		No limitations		No limitation
139su:						
Liveoak taxadjunct loam, frequently flooded----------	45	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Frequent flooding	0.50	Flooding >
		Dusty	0.50	Dusty	0.50	Dusty
Galt taxadjunct clay loam, frequently flooded----------	40	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Depth to pan <= 20"	0.99	Saturation
		Flooding >= rare	1.00	Saturation from 12 to 30" depth	0.88	Flooding >
		Depth to pan <= 20"	0.99	Frequent flooding	0.50	
143su:						
Marcum clay loam--------	45	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.46	Permeability .06-.6"/hr	0.46	Permeabilit
Gridley clay loam-------	40	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.46	Permeability .06-.6"/hr	0.46	Permeabilit
149yu:						
Flanly sandy loam-------	80	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Fragments >
						Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
150:						
Columbia stratified sand to fine sandy loam	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Surface sand fractions > 90% by wt.	1.00	Flooding >
		Surface sand fractions > 90% by wt.	1.00	Frequent flooding	0.50	Surface san 90% by wt.
150su:						
Olashes sandy loam------	85	No limitations		No limitations		No limitation
151yu:						
Flanly sandy loam-------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
						Fragments >
152:						
Gianella fine sandy loam, frequently flooded----------	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Frequent flooding	0.50	Flooding >
153:						
Gianella sandy loam, frequently flooded-----	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Frequent flooding	0.50	Flooding >
154:						
Gianella silt loam, frequently flooded-----	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Frequent flooding	0.50	Flooding >
		Dusty	0.50	Dusty	0.50	Dusty
158:						
Gianella fine sandy loam, occasionally flooded----------	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Surface sand fractions 70-90% by wt.	0.01	Occasional
		Surface sand fractions 70-90% by wt.	0.01			Surface san 90% by wt.

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
160:						
Gianella loam, occasionally flooded---	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Dusty	0.50	Occasional
		Dusty	0.50			Dusty
161:						
Gianella fine sandy loam, rarely flooded---	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Surface sand fractions 70-	0.01	Surface san
		Surface sand fractions 70- 90% by wt.	0.01	90% by wt.		90% by wt.
162:						
Gianella loam, rarely flooded----------	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Dusty	0.50	Dusty
		Dusty	0.50			
163yu:						
Holillipah loamy sand---	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Frequent flooding	0.50	Flooding >
		Surface sand fractions 70- 90% by wt.	0.36	Surface sand fractions 70- 90% by wt.	0.36	Surface san 90% by wt.
165yu:						
Holland loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
Hoda loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
Hotaw loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
173yu:						
Hotaw loam----------	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
173yu:						
Chawanakee gravelly sandy loam	20	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Slopes > 6%
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock dept
Holland loam	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
175:						
Farwell clay loam, rarely flooded	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Permeability .06-.6"/hr	0.10	Permeability
		Permeability .06-.6"/hr	0.10			
176:						
Farwell loam, occasionally flooded	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Dusty	0.50	Occasional f
		Dusty	0.50			Dusty
176yu:						
Jocal loam	80	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
						Surface frag
						25%
177:						
Farwell silt loam, occasionally flooded	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Dusty	0.50	Occasional f
		Dusty	0.50			Dusty
178:						
Arbuckle gravelly loam	87	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Dusty	0.50	Surface frag
		Dusty	0.50			>25%
						Dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
179:						
Moda taxadjunct loam----	65	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Depth to pan between 20 and 40"	0.97	Dusty
Arbuckle gravelly loam--	20	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Dusty	0.50	Surface fra >25%
		Dusty	0.50			Dusty
180:						
Dodgeland silty clay loam, occasionally flooded----------	85	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Permeability .06-.6"/hr	0.46	Occasional
181:						
Dodgeland silty clay loam, frequently flooded----------	80	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Flooding >
		Ponding (any duration)	1.00	Frequent flooding	0.50	Ponding (an
188yu:						
Mariposa taxadjunct gravelly loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface fra >25%
		Fragments (<3") 25-50%	0.14	Fragments (<3") 25-50%	0.14	Bedrock 20- 2%
189:						
Esquon silt loam, overwash----------	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Dusty	0.50	Dusty
		Dusty	0.50	Permeability .06-.6"/hr	0.49	Permeabilit

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
189yu:						
Mariposa taxadjunct gravelly loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface frag
		Fragments (<3") 25-50%	0.14	Fragments (<3") 25-50%	0.14	>25%
						Bedrock 20-4
						2%
196yu:						
Mildred cobbly loam-----	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Fragments >3
		Permeability .06-.6"/hr	0.50	Permeability .06-.6"/hr	0.50	Surface frag
						25%
200:						
Parrott silt loam, occasionally flooded---	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Dusty	0.50	Occasional f
		Dusty	0.50			Dusty
201:						
Parrott silt loam, frequently flooded-----	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Flooding > o
		Ponding (any duration)	1.00	Frequent flooding	0.50	Ponding (any
		Dusty	0.50	Dusty	0.50	Dusty
203:						
Kusalslough silty clay loam, occasionally flooded----------	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Permeability .06-.6"/hr	0.10	Occasional f
		Permeability .06-.6"/hr	0.10			Permeability

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
205:						
Parrott silt loam, frequently flooded-----	50	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Flooding > c
		Ponding (any duration)	1.00	Frequent flooding	0.50	Ponding (any
		Dusty	0.50	Dusty	0.50	Dusty
Vermet silt loam, frequently flooded-----	35	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation <
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Flooding > c
		Ponding (any duration)	1.00	Frequent flooding	0.50	Ponding (any
206:						
Islandbar sandy loam----	60	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dept
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
207:						
Islandbar sandy loam----	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dept
208:						
Islandbar sandy loam----	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dept
209:						
Islandbar sandy loam----	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
209:						
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dept
210:						
Featherfalls sandy loam	50	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
Islandbar sandy loam	35	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
211:						
Featherfalls sandy loam	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Islandbar sandy loam	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
212:						
Featherfalls sandy loam	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Islandbar sandy loam	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
213:						
Featherfalls sandy loam	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Islandbar sandy loam	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
214:						
Crystalhill gravelly coarse sandy loam	35	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 6%
Oregongulch gravelly sandy loam	20	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.50	Permeability .06-.6"/hr	0.50	Slopes > 6%
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Permeability

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
214:						
Craigsaddle coarse sandy loam	20	No limitations		No limitations		Limitations Slopes > 6%
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated
215:						
Crystalhill gravelly coarse sandy loam	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%
Oregongulch gravelly sandy loam	20	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.50	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.50	Limitations Slopes > 6% Permeabilit
Craigsaddle coarse sandy loam	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated
216:						
Crystalhill gravelly coarse sandy loam	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%
Oregongulch gravelly sandy loam	20	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.50	Limitations Slopes > 15% Permeability .06-.6"/hr	1.00 0.50	Limitations Slopes > 6% Permeabilit
Craigsaddle coarse sandy loam	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15%	1.00	Limitations Slopes > 6%
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
217:						
Crystalhill gravelly coarse sandy loam------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Oregongulch gravelly sandy loam-------------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.50	Permeability .06-.6"/hr	0.50	Permeabilit
Craigsaddle coarse sandy loam-------------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Rock outcrop, trondhjemite-----------	10	Not rated		Not rated		Not rated
218:						
Rock outcrop, quartz diorite----------------	60	Not rated		Not rated		Not rated
Lithic Xerorthents gravelly sandy loam----	20	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Slopes > 6%
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Chawanakee gravelly sandy loam-------------	15	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Slopes > 6%
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock dep
219:						
Rock outcrop, quartz diorite----------------	60	Not rated		Not rated		Not rated
Lithic Xerorthents gravelly sandy loam----	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
219:						
Chawanakee gravelly sandy loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
220:						
Esquon clay, frequently flooded----------	60	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Flooding >
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Ponding (an
		Surface clay >= 40%	1.00	Saturation from 12 to 30" depth	0.75	Surface cla
Clear Lake silty clay loam, overwash---------	30	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Flooding >
		Ponding (any duration)	1.00	Frequent flooding	0.50	Ponding (an
221yu:						
Sites loam----------	85	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes 2 to
						Dusty
						Surface fra
						25%
222yu:						
Sites loam----------	85	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
						Surface fra
						25%
225yu:						
Sites gravelly loam, bedrock substratum-----	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Surface fra
		Fragments (<3") 25-50%	0.26	Fragments (<3") 25-50%	0.26	>25%
						Slopes 2 to
						Dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
226yu:						
Sites gravelly loam, bedrock substratum-----	80	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface frag
		Fragments (<3") 25-50%	0.26	Fragments (<3") 25-50%	0.26	>25%
						Dusty
227yu:						
Sites gravelly loam, bedrock substratum-----	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface frag
		Fragments (<3") 25-50%	0.26	Fragments (<3") 25-50%	0.26	>25%
						Dusty
242yu:						
Surnuf loam-------------	80	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
243yu:						
Surnuf loam-------------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
244yu:						
Surnuf loam-------------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
245:						
Surnuf loam-------------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
248yu:						
Trainer loam------------	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Dusty	0.50	Occasional f
		Dusty	0.50			Dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
250:						
Llanoseco, occasionally flooded	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Permeability .06-.6"/hr	0.44	Occasional
		Permeability .06-.6"/hr	0.44			Permeabilit
252:						
Whitecabin silty clay, occasionally flooded	60	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
		Surface clay >= 40%	1.00	Permeability .06-.6"/hr	0.46	Occasional
Ordferry silty clay, occasionally flooded	25	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
252yu:						
Woodleaf gravelly loam	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Permeability .06-.6"/hr	0.46	Permeability .06-.6"/hr	0.46	Surface fra
		Slopes 8 to 15%	0.04	Slopes 8 to 15%	0.04	>25%
						Fragments >
253yu:						
Woodleaf gravelly loam	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface fra
		Permeability .06-.6"/hr	0.46	Permeability .06-.6"/hr	0.46	>25%
						Fragments >
255:						
Whitecabin silty clay loam, occasionally flooded	60	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Permeability .06-.6"/hr	0.46	Occasional
		Permeability .06-.6"/hr	0.46	Saturation from 12 to 30" depth	0.08	Permeabilit

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
255:						
Ordferry silty clay, occasionally flooded---	30	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
256:						
Whitecabin silt loam, occasionally flooded---	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Dusty	0.50	Occasional
		Dusty	0.50	Permeability .06-.6"/hr	0.46	Dusty
257:						
Llanoseco, frequently flooded----------	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Flooding >
		Ponding (any duration)	1.00	Frequent flooding	0.50	Ponding (an
		Permeability .06-.6"/hr	0.44	Permeability .06-.6"/hr	0.44	Permeabilit
258:						
Codora, occasionally flooded----------	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Permeability .06-.6"/hr	0.31	Occasional
		Permeability .06-.6"/hr	0.31			Permeabilit
260:						
Ordferry silty clay, occasionally flooded---	90	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
280:						
Columbia taxadjunct stratified very fine sandy loam----------	80	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Frequent flooding	0.50	Flooding >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
290:						
Perkins gravelly loam---	90	Limitations		Limitations		Limitations
		Fragments (<3") 25-50%	0.68	Fragments (<3") 25-50%	0.68	Surface fra
		Dusty	0.50	Dusty	0.50	>25%
						Dusty
						Slopes 2 to
300:						
Redsluff gravelly loam--	80	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Fragments (<3") 25-50%	0.68	Surface fra
		Fragments (<3") 25-50%	0.68	Dusty	0.50	>25%
		Dusty	0.50			Dusty
301:						
Wafap gravelly loam-----	70	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation from 12 to 30"	0.90	Saturation
		Flooding >= rare	1.00	depth		Surface fra
		Dusty	0.50	Dusty	0.50	>25%
				Permeability .06-.6"/hr	0.35	Dusty
Hamslough clay----------	15	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
302:						
Redtough loam----------	50	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Dusty
		Dusty	0.50	Dusty	0.50	Surface fra
						25%
Redswale cobbly loam----	35	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Fragments >
303:						
Munjar gravelly loam----	60	Limitations		Limitations		Limitations
		Saturation from 18 to 30"	0.88	Saturation from 12 to 30"	0.56	Surface fra
		depth		depth		>25%
		Dusty	0.50	Dusty	0.50	Saturation
		Depth to pan between 20 and	0.35	Depth to pan between 20 and	0.35	depth
		40"		40"		Dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
303:						
Tuscan taxadjunct gravelly clay loam-----	20	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan between 20 and 40"	0.54	Depth to pan between 20 and 40"	0.54	Surface fra >25%
		Permeability .6-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeabilit
Galt clay----------	10	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
304:						
Redtough loam----------	80	Limitations		Limitations		Limitations
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Slopes > 6%
		Slopes > 15%	1.00	Slopes > 15%	1.00	Dusty
		Dusty	0.50	Dusty	0.50	Surface fra 25%
305:						
Redtough gravelly loam--	45	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Surface fra >25%
		Dusty	0.50	Dusty	0.50	Dusty
Redswale loam----------	25	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Dusty
Anita, gravelly duripan	20	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Surface cla
306:						
Duric Xerarents, fill---	50	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Dusty	0.50	Dusty	0.50	Dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
306:						
Duric Xerarents, cut----	40	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	
307:						
Duric Xerarents clay loam, leveled----------	70	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Permeabilit
310:						
Kimball loam------------	85	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Dusty
317:						
Thompsonflat loam-------	75	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes 2 to
		Permeability .06-.6"/hr	0.44	Permeability .06-.6"/hr	0.44	Dusty
						Permeabilit
318:						
Thompsonflat fine sandy loam--------------------	50	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.46	Permeability .06-.6"/hr	0.46	Slopes 2 to
						Permeabilit
						Surface fra
						25%
Oroville gravelly fine sandy loam------------	40	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation
		Ponding (any duration)	1.00	Saturation < 12" depth	0.99	Ponding (an
		Depth to pan between 20 and 40"	0.95	Depth to pan between 20 and 40"	0.95	Surface fra >25%
320:						
Vistarobles sandy loam--	50	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Permeabilit

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
320:						
Redding loam----------	40	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Dusty
		Permeability .06-.6"/hr	0.48	Permeability .06-.6"/hr	0.48	Permeability
		Saturation from 18 to 30" depth	0.39	Saturation from 12 to 30" depth	0.19	Saturation f depth
321:						
Durixeralfs, fine-loamy, gravelly fine sandy loam----------	50	Limitations		Limitations		Limitations
		Saturation from 18 to 30" depth	0.88	Depth to pan between 20 and 40"	0.71	Surface frag >25%
		Depth to pan between 20 and 40"	0.71	Fragments (<3") 25-50%	0.68	Saturation f
		Fragments (<3") 25-50%	0.68	Saturation from 12 to 30" depth	0.56	Permeability
Durixeralfs, loamy-skeletal, gravelly fine sandy loam----------	20	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation <
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Surface frag >25%
Typic Petraquepts silty clay----------	15	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation <
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Surface clay
330:						
Wilsoncreek loam, occasionally flooded---	60	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Dusty	0.50	Occasional f
		Dusty	0.50			Dusty
Trainer loam, occasionally flooded---	25	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Dusty	0.50	Occasional f
		Dusty	0.50			Dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
331:						
Thompsonflat loam-------	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
		Permeability .06-.6"/hr	0.44	Permeability .06-.6"/hr	0.44	Permeabilit
335:						
Galt clay loam----------	85	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Depth to pan between 20 and 40"	0.46	Depth to pan between 20 and 40"	0.46	Permeabilit
336:						
Galt clay---------------	90	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
337:						
Galt clay loam----------	85	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Depth to pan between 20 and 40"	0.46	Depth to pan between 20 and 40"	0.46	Permeabilit
338:						
Oxyaquic Xerofluvents silt loam--------------	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Dusty	0.50	Dusty
		Dusty	0.50			
339:						
Oxyaquic Xerofluvents sandy loam, frequently flooded----------	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Flooding >
		Ponding (any duration)	1.00	Frequent flooding	0.50	Ponding (an

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
340:						
Rock outcrop, Lovejoy basalt	35	Not rated		Not rated		Not rated
Thermalrocks very gravelly loam	25	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
						Surface fra
						25%
						Fragments >
Campbellhills gravelly loam	20	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Dusty	0.50	Dusty	0.50	Surface fra
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	25%
						Slopes 2 to
341:						
Elsey loam	25	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation from 12 to 30" depth	0.90	Saturation
						Bedrock 20-
						2%
						Slopes 2 to
Beatsonhollow gravelly loam	25	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
Campbellhills gravelly loam	20	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Dusty	0.50	Dusty	0.50	Surface fra
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	25%
						Dusty
Rock outcrop, Lovejoy basalt	20	Not rated		Not rated		Not rated

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
342:						
Thermalrocks very gravelly loam----------	40	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
						Surface fra
						25%
Beatsonhollow taxadjunct fine sandy loam--------------------	35	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
						Surface fra
						25%
Rock outcrop, Lovejoy basalt-----------------	15	Not rated		Not rated		Not rated
343:						
Coalcanyon very cobbly loam--------------------	50	Limitations		Limitations		Limitations
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Fragments >
		Fragments >3" 25 to 75%	0.32	Fragments >3" 25 to 75%	0.32	Fragments >
Coonhollow gravelly loam--------------------	35	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Fragments >
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Surface fra
						25%
344:						
Coalcanyon very cobbly loam--------------------	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Fragments >
		Dusty	0.50	Dusty	0.50	Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
344:						
Coonhollow gravelly loam	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Dusty	0.50	Dusty	0.50	Surface fra
						25%
Rock outcrop, Lovejoy basalt	15	Not rated		Not rated		Not rated
346:						
Cherotable loam	50	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes 2 to
		Permeability .06-.6"/hr	0.49	Permeability .06-.6"/hr	0.49	Dusty
						Permeabilit
Elsey loam	35	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation from 12 to 30" depth	0.90	Saturation
						Slopes 2 to
						Bedrock 20-
						2%
347:						
Haplic Palexeralfs loam	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Dusty	0.50	Slopes 2 to
		Dusty	0.50	Permeability .06-.6"/hr	0.28	Occasional
		Permeability .06-.6"/hr	0.28			Dusty
353:						
Cherokeespring gravelly silt loam	80	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface fra
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	>25%
						Dusty
355:						
Coalcanyon very cobbly loam	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Fragments >
		Dusty	0.50	Dusty	0.50	Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
355:						
Talus	35	Not rated		Not rated		Not rated
356:						
Coalcanyon very cobbly loam	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Fragments >
		Dusty	0.50	Dusty	0.50	Fragments >
Rock outcrop, basalt cliffs	20	Not rated		Not rated		Not rated
Talus	20	Not rated		Not rated		Not rated
Coonhollow gravelly loam	10	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Dusty	0.50	Dusty	0.50	Surface fra
						25%
360:						
Typic Xerofluvents, coarse-loamy	45	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Surface sand fractions 70-	0.76	Surface fra
		Surface sand fractions 70-	0.76	90% by wt.		>25%
		90% by wt.		Fragments (<3") 25-50%	0.08	Surface san
		Fragments (<3") 25-50%	0.08			90% by wt.
						Slopes 2 to
Typic Xerofluvents, sandy-skeletal	40	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Fragments (<3") 25-50%	0.92	Surface fra
		Fragments (<3") 25-50%	0.92	Surface sand fractions 70-	0.82	>25%
		Surface sand fractions 70-	0.82	90% by wt.		Surface san
		90% by wt.				90% by wt.
						Slopes 2 to

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
361:						
Typic Xerofluvents, sandy-skeletal---------	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Fragments (<3") 25-50%	0.92	Surface frag
		Fragments (<3") 25-50%	0.92	Surface sand fractions 70-	0.82	>25%
		Surface sand fractions 70-	0.82	90% by wt.		Surface sand
		90% by wt.				90% by wt.
						Slopes 2 to
362:						
Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	No limitations		No limitations		Limitations
						Slopes 2 to
Ultic Haploxeralfs, sandstone, low elevation, deep--------	25	No limitations		No limitations		Limitations
						Slopes 2 to
						Surface frag
						25%
363:						
Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	No limitations		No limitations		Limitations
						Slopes 2 to
Ultic Haploxeralfs, sandstone, low elevation, deep--------	30	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%
						Surface frag
						25%
364:						
Ultic Haploxeralfs, sandstone, low elevation, deep--------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
						Surface frag
						25%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
364:						
Ultic Haploxeralfs, sandstone, low elevation, very deep---	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
365:						
Palexerults gravelly loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
		Permeability .06-.6"/hr	0.50	Permeability .06-.6"/hr	0.50	Permeabilit
366:						
Palexerults gravelly loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
		Permeability .06-.6"/hr	0.50	Permeability .06-.6"/hr	0.50	Permeabilit
370:						
Palexerults gravelly loam----------	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Permeability .06-.6"/hr	0.50	Permeability .06-.6"/hr	0.50	Dusty
						Permeabilit
375:						
Wickscorner loam--------	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes 2 to
		Permeability .06-.6"/hr	0.44	Permeability .06-.6"/hr	0.44	Dusty
						Permeabilit
376:						
Flagcanyon gravelly loam----------	50	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Surface fra
		Depth to pan between 20 and 40"	0.46	Depth to pan between 20 and 40"	0.46	>25%
						Slopes 2 to
		Saturation from 18 to 30" depth	0.28	Saturation from 12 to 30" depth	0.14	Dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
376:						
Wickscorner loam--------	35	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Dusty
		Permeability .06-.6"/hr	0.44	Permeability .06-.6"/hr	0.44	Permeabilit
						Slopes 2 to
377:						
Flagcanyon taxadjunct fine sandy loam--------	55	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation
		Ponding (any duration)	1.00	Saturation from 12 to 30" depth	0.88	Ponding (an
		Permeability .06-.6"/hr	0.46	Permeability .06-.6"/hr	0.46	Permeabilit
Durixeralfs, clayey-skeletal, loam---------	20	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Dusty
Duraquerts gravelly clay-------------------	15	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Surface cla
400:						
Subaco taxadjunct clay--	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
		Surface clay >= 40%	1.00	Saturation from 12 to 30" depth	0.52	Saturation depth
415:						
Ignord fine sandy loam--	90	Limitations		No limitations		No limitation
		Flooding >= rare	1.00			
416:						
Calcic Haploxerolls sandy loam------------	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Surface EC 4-8 mmhos/cm	0.50	Surface EC
		Surface EC 6 to 8 mmhos/cm	0.50	Surface SAR between 8-13	0.32	Surface SAR

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
418:						
Almendra loam----------	85	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Dusty
419:						
Conejo fine sandy loam, overwash----------	85	No limitations		No limitations		No limitation
420:						
Conejo clay loam--------	85	No limitations		No limitations		No limitation
425:						
Vina fine sandy loam----	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Surface sand fractions 70-	0.01	Surface san
		Surface sand fractions 70- 90% by wt.	0.01	90% by wt.		90% by wt.
426:						
Vina loam----------	85	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Dusty
439:						
Oxyaquic Xerofluvents clay----------	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Flooding >
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Ponding (an
		Surface clay >= 40%	1.00	Frequent flooding	0.50	Surface cla
440:						
Oxyaquic Xerofluvents silt loam, frequently flooded----------	80	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Flooding >
		Ponding (any duration)	1.00	Frequent flooding	0.50	Ponding (an
		Dusty	0.50	Dusty	0.50	Dusty
441:						
Oxyaquic Xerofluvents very fine sandy loam---	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Dusty	0.50	Dusty
		Dusty	0.50			

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
442:						
Durixerolls clay loam---	55	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation
		Flooding >= rare	1.00	Saturation from 12 to 30" depth	0.94	Ponding (an
		Ponding (any duration)	1.00			Permeabilit
				Depth to pan between 20 and 40"	0.20	
Haploxerolls clay loam--	30	Limitations		No limitations		No limitation
		Flooding >= rare	1.00			
443:						
Durixerolls loam--------	60	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation from 12 to 30" depth	0.94	Saturation
		Flooding >= rare	1.00			Dusty
		Depth to pan between 20 and 40"	0.80	Depth to pan between 20 and 40"	0.80	
				Dusty	0.50	
Haploxerolls loam-------	25	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Dusty	0.50	Dusty
		Dusty	0.50			
445:						
Chico loam--------------	85	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Dusty
447:						
Charger fine sandy loam	80	Limitations		No limitations		Limitations
		Flooding >= rare	1.00			Surface fra
						25%
448:						
Haploxerolls clay loam--	75	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Permeability .06-.6"/hr	0.10	Permeabilit
		Permeability .06-.6"/hr	0.10			
449:						
Haploxerolls loam-------	75	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Dusty	0.50	Dusty
		Dusty	0.50			

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
500:						
Lofgren clay----------	45	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
		Surface clay >= 40%	1.00	Saturation from 12 to 30" depth	0.56	Saturation depth
Blavo clay----------	40	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
		Surface clay >= 40%	1.00	Saturation from 12 to 30" depth	0.56	Saturation depth
501:						
Lofgren clay, occasionally flooded---	45	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
		Surface clay >= 40%	1.00	Saturation from 12 to 30" depth	0.56	Saturation depth
Blavo clay, occasionally flooded---	40	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
		Surface clay >= 40%	1.00	Saturation from 12 to 30" depth	0.56	Saturation depth
502:						
Blavo silt loam, overwash, occasionally flooded----------	80	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Saturation from 12 to 30" depth	0.56	Saturation depth
		Saturation from 18 to 30" depth	0.88	Dusty	0.50	Occasional
519:						
Edjobe silty clay-------	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Surface cla
		Permeability .06-.6"/hr	0.50	Permeability .06-.6"/hr	0.50	Permeabilit

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
520:						
Esquon clay----------	60	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
		Surface clay >= 40%	1.00	Permeability .06-.6"/hr	0.44	Permeabilit
Neerdobe clay----------	30	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
		Surface clay >= 40%	1.00	Saturation from 12 to 30" depth	0.56	Saturation depth
521:						
Neerdobe silt loam, overwash----------	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Dusty	0.50	Dusty
		Dusty	0.50	Permeability .06-.6"/hr	0.40	Permeabilit
522:						
Clear Lake silty clay loam, overwash---------	80	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Flooding >
		Ponding (any duration)	1.00	Frequent flooding	0.50	Ponding (an
523:						
Esquon, silty clay loam, overwash----------	80	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Flooding >
		Ponding (any duration)	1.00	Frequent flooding	0.50	Ponding (an
525:						
Govstanford loam--------	85	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Dusty
		Saturation from 18 to 30" depth	0.24	Saturation from 12 to 30" depth	0.12	Saturation depth

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
526:						
Govstanford loam, occasionally flooded---	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Dusty	0.50	Occasional
		Dusty	0.50	Saturation from 12 to 30" depth	0.12	Dusty
		Saturation from 18 to 30" depth	0.24			Saturation depth
528:						
Neerdobe clay loam------	90	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation
		Flooding >= rare	1.00	Saturation from 12 to 30" depth	0.98	Ponding (an
		Ponding (any duration)	1.00			Permeabilit
				Depth to pan between 20 and 40"	0.86	
550:						
Dunstone loam, dry------	60	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Slopes 2 to
						Dusty
Loafercreek silt loam, dry----------	20	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Dusty
551:						
Dunstone loam, dry------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Dusty
Lomarica loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
		Permeability .06-.6"/hr	0.48	Permeability .06-.6"/hr	0.48	Permeabilit
Argonaut taxadjunct loam	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
		Permeability .06-.6"/hr	0.40	Permeability .06-.6"/hr	0.40	Permeabilit

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
552:						
Dunstone gravelly loam--	45	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Fragments (<3") 25-50%	0.08	Fragments (<3") 25-50%	0.08	Surface fra
						>25%
Loafercreek gravelly loam--	40	Limitations		Limitations		Limitations
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fra
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	>25%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
						Fragments >
553:						
Dunstone gravelly loam--	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Surface fra
						>25%
Loafercreek gravelly loam--	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fra
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	>25%
						Fragments >
554:						
Dunstone gravelly loam--	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Surface fra
						>25%
Loafercreek gravelly loam--	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fra
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	>25%
						Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
555:						
Dunstone gravelly loam--	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Surface fra
						>25%
Loafercreek gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fra
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	>25%
						Fragments >
556:						
Mounthope loam----------	50	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Fragments >
Hartsmill gravelly loam	40	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.31	Permeability .06-.6"/hr	0.31	Fragments >
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Permeabilit
557:						
Mounthope loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Hartsmill gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Permeability .06-.6"/hr	0.31	Permeability .06-.6"/hr	0.31	Permeabilit
558:						
Hartsmill gravelly loam	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Permeability .06-.6"/hr	0.31	Permeability .06-.6"/hr	0.31	Permeabilit
Mounthope loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
559:						
Hartsmill gravelly loam	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Permeability .06-.6"/hr	0.31	Permeability .06-.6"/hr	0.31	Permeabilit
Mounthope loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
560:						
Hartsmill gravelly loam	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Permeability .06-.6"/hr	0.31	Permeability .06-.6"/hr	0.31	Permeabilit
Mounthope loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
561:						
Bigridge loam-----------	50	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
Minniecreek loam--------	35	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Surface fra
						25%
562:						
Bigridge loam-----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Minniecreek loam--------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Surface fra
						25%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
563:						
Bigridge loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Minniecreek loam--------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Surface fra
						25%
564:						
Bigridge loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Minniecreek loam--------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Surface fra
						25%
565:						
Dunstone loam, dry------	35	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Slopes 2 to
						Dusty
Argonaut taxadjunct loam	30	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Permeability .06-.6"/hr	0.40	Permeability .06-.6"/hr	0.40	Dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Permeabilit
Sunnyslope loam---------	20	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Slopes > 6%
						Dusty
566:						
Dunstone loam, dry------	45	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Slopes 2 to
						Dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
566:						
Loafercreek silt loam, dry	20	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Dusty
Katskillhill loam	15	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Permeability .06-.6"/hr	0.48	Permeability .06-.6"/hr	0.48	Dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Permeabilit
567:						
Dunstone loam, dry	40	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Slopes 2 to
						Dusty
Loafercreek silt loam, dry	25	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Dusty
Argonaut taxadjunct loam	20	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Permeability .06-.6"/hr	0.40	Permeability .06-.6"/hr	0.40	Dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Permeabilit
577:						
Parkshill coarse sandy loam	40	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
Flanly loam	25	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Dusty
Hurleton gravelly sandy loam	20	Limitations		Limitations		Limitations
		Fragments (<3") 25-50%	0.08	Fragments (<3") 25-50%	0.08	Surface fra
		Slopes 8 to 15%	0.04	Slopes 8 to 15%	0.04	>25%
						Slopes > 6%
						Bedrock 20-
						2%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
578:						
Flanly loam----------	45	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Dusty
Swedesflat cobbly fine sandy loam----------	35	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 6%
						Fragments >
580:						
Surnuf taxadjunct loam--	40	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
Griffgulch very gravelly silt loam-----	25	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.44	Permeability .06-.6"/hr	0.44	Slopes > 6%
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Permeabilit
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Fragments >
Rock outcrop, metavolcanic----------	20	Not rated		Not rated		Not rated
581:						
Surnuf taxadjunct loam--	65	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Griffgulch very gravelly silt loam-----	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.44	Permeability .06-.6"/hr	0.44	Permeabilit
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >
582:						
Surnuf taxadjunct loam--	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Griffgulch very gravelly silt loam-----	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.44	Permeability .06-.6"/hr	0.44	Permeabilit
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
583:						
Surnuf taxadjunct loam--	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Griffgulch very gravelly silt loam-----	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.44	Permeability .06-.6"/hr	0.44	Permeabilit
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >
584:						
Flanly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
Swedesflat cobbly fine sandy loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
						Fragments >
Rackerby very gravelly sandy loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fra
						>25%
585:						
Flanly loam----------	45	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Dusty
Sommeyflat loam---------	35	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes 2 to
						Dusty
586:						
Sommeyflat loam---------	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
586:						
Mounthope loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
587:						
Sommeyflat loam---------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Dusty
Mounthope loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Hurleton gravelly sandy loam--------------------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments (<3") 25-50%	0.08	Fragments (<3") 25-50%	0.08	Surface fra >25%
						Bedrock 20- 2%
588:						
Ultic Haploxeralfs, thermic, high terrace--	95	Limitations		Limitations		Limitations
		Saturation from 18 to 30" depth	0.88	Saturation from 12 to 30" depth	0.56	Slopes > 6% Saturation
		Dusty	0.50	Dusty	0.50	depth
						Dusty
589:						
Ultic Haploxeralfs, thermic, high terrace--	95	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Saturation from 18 to 30" depth	0.88	Saturation from 12 to 30" depth	0.56	Saturation depth
		Dusty	0.50	Dusty	0.50	Dusty
590:						
Vistarobles sandy loam--	30	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Permeabilit

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
590:						
Redding loam----------	25	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Dusty
		Permeability .06-.6"/hr	0.48	Permeability .06-.6"/hr	0.48	Permeabilit
		Saturation from 18 to 30" depth	0.39	Saturation from 12 to 30" depth	0.19	Saturation depth
Argonaut taxadjunct loam	20	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes 2 to
		Permeability .06-.6"/hr	0.40	Permeability .06-.6"/hr	0.40	Dusty
						Permeabilit
Haploxererts gravelly silty clay----------	15	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Surface fra >25%
603:						
Oroville gravelly fine sandy loam----------	30	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation
		Ponding (any duration)	1.00	Saturation < 12" depth	0.99	Ponding (an
		Depth to pan between 20 and 40"	0.95	Depth to pan between 20 and 40"	0.95	Surface fra >25%
Thermalito sandy loam---	25	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation from 12 to 30" depth	0.96	Saturation
		Permeability .06-.6"/hr	0.46			Permeabilit
		Depth to pan between 20 and 40"	0.35	Permeability .06-.6"/hr	0.46	Slopes 2 to
				Depth to pan between 20 and 40"	0.35	
Fernandez sandy loam----	15	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.20	Permeability .06-.6"/hr	0.20	Surface fra 25%
						Permeabilit

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
603:						
Thompsonflat fine sandy loam----------	15	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.46	Permeability .06-.6"/hr	0.46	Slopes 2 to
						Permeabilit
						Surface fra
						25%
605:						
Duric Xerarents fine sandy loam, leveled----	75	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Surface fra
						25%
Oroville gravelly fine sandy loam----------	20	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation
		Ponding (any duration)	1.00	Saturation < 12" depth	0.99	Ponding (an
		Depth to pan between 20 and 40"	0.95	Depth to pan between 20 and 40"	0.95	Surface fra
						>25%
606:						
Redtough loam----------	45	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Dusty
		Dusty	0.50	Dusty	0.50	Surface fra
						25%
Fallager loam----------	30	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Dusty
Anita, gravelly duripan	15	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Surface cla

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
609:						
Anita, gravelly duripan	50	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Surface cla
Tuscan taxadjunct gravelly clay loam-----	40	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan between 20 and 40"	0.54	Depth to pan between 20 and 40"	0.54	Surface fra >25%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeabilit
614:						
Doemill gravelly loam---	50	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra >25%
Jokerst very cobbly loam	40	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Bedrock depth < 20"	1.00	Ponding (any duration)	1.00	Flooding >
615:						
Doemill gravelly loam---	50	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra >25%
Jokerst very cobbly loam	40	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Bedrock depth < 20"	1.00	Ponding (any duration)	1.00	Flooding >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
616:						
Jokerst very cobbly loam	35	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Saturation
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Bedrock dep
Doemill gravelly loam---	35	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Bedrock depth < 20"	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Fragments >10" >3%	1.00	Saturation
		Fragments >10" >3%	1.00	Saturation < 12" depth	0.99	Bedrock dep
Typic Haploxeralfs gravelly loam----------	15	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%
		Slopes 8 to 15%	0.84	Slopes 8 to 15%	0.84	Surface fra
		Fragments (<3") 25-50%	0.68	Fragments (<3") 25-50%	0.68	>25%
						Fragments >
617:						
Doemill gravelly loam---	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Saturation < 18" depth	1.00	Bedrock depth < 20"	1.00	Saturation
		Bedrock depth < 20"	1.00	Fragments >10" >3%	1.00	Bedrock dep
Jokerst very cobbly loam	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
Typic Haploxeralfs gravelly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
		Fragments (<3") 25-50%	0.68	Fragments (<3") 25-50%	0.68	>25%
						Fragments >
619:						
Carhart taxadjunct clay	90	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
620:						
Doemill gravelly loam---	40	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra >25%
Jokerst very cobbly loam	25	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Dusty	0.50	Dusty	0.50	Fragments >
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Slopes 2 to
621:						
Doemill gravelly loam---	30	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Bedrock depth < 20"	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Fragments >10" >3%	1.00	Saturation
		Fragments >10" >3%	1.00	Saturation < 12" depth	0.99	Bedrock dep
Jokerst very cobbly loam	30	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Saturation
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Bedrock dep
Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Fragments >
		Slopes 8 to 15%	0.37	Slopes 8 to 15%	0.37	Fragments >
622:						
Xerorthents, shallow----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra >25%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
622:						
Typic Haploxeralfs gravelly loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
		Fragments (<3") 25-50%	0.68	Fragments (<3") 25-50%	0.68	>25%
						Fragments >
Rock outcrop, mudflow-breccia cliffs---------	15	Not rated		Not rated		Not rated
623:						
Xerorthents, shallow----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
						>25%
Typic Haploxeralfs gravelly loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
		Fragments (<3") 25-50%	0.68	Fragments (<3") 25-50%	0.68	>25%
						Fragments >
Rock outcrop, mudflow-breccia cliffs---------	20	Not rated		Not rated		Not rated
624:						
Ultic Haploxeralfs, mesic, gravelly loam---	60	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Slopes 2 to
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Permeabilit
						Fragments >
Rockstripe very gravelly loam----------	25	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
		Dusty	0.50	Dusty	0.50	>25%
						Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
625:						
Ultic Haploxeralfs, mesic, gravelly loam---	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeabilit
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >
Rockstripe very gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
						>25%
626:						
Ultic Haploxeralfs gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Surface fra
		Dusty	0.50	Dusty	0.50	>25%
						Fragments >
Rockstripe very gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
						>25%
Rock outcrop, mudflow-breccia cliffs---------	15	Not rated		Not rated		Not rated
627:						
Ultic Haploxeralfs gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Surface fra
		Dusty	0.50	Dusty	0.50	>25%
						Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
627:						
Rockstripe very gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
						>25%
Rock outcrop, mudflow-breccia cliffs---------	15	Not rated		Not rated		Not rated
628:						
Rockstripe very gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
						>25%
Ultic Haploxeralfs gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Surface fra
		Dusty	0.50	Dusty	0.50	>25%
						Fragments >
Rock outcrop, mudflow-breccia cliffs---------	20	Not rated		Not rated		Not rated
629:						
Slideland gravelly loam	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Slopes 8 to 15%	0.37	Slopes 8 to 15%	0.37	Surface fra
		Permeability .06-.6"/hr	0.20	Permeability .06-.6"/hr	0.20	>25%
						Dusty
630:						
Slideland gravelly loam	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface fra
		Permeability .06-.6"/hr	0.20	Permeability .06-.6"/hr	0.20	>25%
						Dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
631:						
Slideland gravelly loam	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface fra
		Permeability .06-.6"/hr	0.20	Permeability .06-.6"/hr	0.20	>25%
						Dusty
632:						
Ultic Haploxeralfs, conglomerate, very deep	50	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.84	Slopes 8 to 15%	0.84	Slopes > 6%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
Ultic Haploxeralfs, conglomerate, moderately deep--------	40	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
						Slopes 2 to
633:						
Ultic Haploxeralfs, conglomerate, very deep	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
Ultic Haploxeralfs, conglomerate, moderately deep--------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
634:						
Ultic Haploxeralfs, conglomerate, very deep	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
Ultic Haploxeralfs, conglomerate, moderately deep--------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
635:						
Ultic Haploxeralfs, conglomerate, very deep	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
Ultic Haploxeralfs, conglomerate, moderately deep--------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
636:						
Ultic Haploxeralfs, conglomerate, moderately deep--------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Ultic Haploxeralfs, conglomerate, very deep	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
637:						
Ultic Haploxeralfs, sandstone----------	80	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
638:						
Ultic Haploxeralfs, sandstone----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
639:						
Ultic Haploxeralfs, sandstone----------	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
640:						
Ultic Haploxeralfs, sandstone----------	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
641:						
Ultic Haploxeralfs,						
sandstone----------	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
642:						
Chinacamp gravelly loam	70	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Slopes 2 to
						Permeabilit
643:						
Chinacamp gravelly loam	70	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
644:						
Chinacamp gravelly loam	70	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
645:						
Chinacamp gravelly loam	70	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
646:						
Coalcanyon taxadjunct						
very gravelly loam-----	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Surface fra
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	25%
						Fragments >
						Slopes 2 to
647:						
Coalcanyon taxadjunct						
very gravelly loam-----	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface fra
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	25%
						Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
648:						
Coalcanyon taxadjunct very gravelly loam-----	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface fra
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	25%
						Fragments >
649:						
Coalcanyon taxadjunct very gravelly loam-----	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface fra
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	25%
						Fragments >
650:						
Schott very gravelly loam-------------------	65	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
						Slopes 2 to
651:						
Schott very gravelly loam-------------------	65	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
652:						
Schott very gravelly loam-------------------	65	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Rock outcrop, mudflow breccia----------------	20	Not rated		Not rated		Not rated

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
654:						
Coridge bouldery loam---	70	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Saturation from 18 to 30" depth	0.90	Saturation from 12 to 30" depth	0.60	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Saturation depth
Rock outcrop, Cohasset basalt-----------	20	Not rated		Not rated		Not rated
655:						
Coridge bouldery loam---	70	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Fragments >
		Saturation from 18 to 30" depth	0.44	Permeability .06-.6"/hr	0.35	Dusty
Rock outcrop, Cohasset basalt-----------	20	Not rated		Not rated		Not rated
656:						
Rock outcrop, basalt cliffs-----------	40	Not rated		Not rated		Not rated
Coalcanyon taxadjunct very gravelly loam-----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface fra
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	25%
						Fragments >
657:						
Bonneyridge sandy loam--	35	No limitations		No limitations		Limitations
						Slopes > 6%
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
						Slopes > 6%
Rock outcrop, quartz diorite----------	20	Not rated		Not rated		Not rated

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
658:						
Bonneyridge sandy loam--	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
Rock outcrop, quartz diorite----------	25	Not rated		Not rated		Not rated
659:						
Bonneyridge sandy loam--	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
Rock outcrop, quartz diorite----------	25	Not rated		Not rated		Not rated
660:						
Bonneyridge sandy loam--	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
Rock outcrop, quartz diorite----------	30	Not rated		Not rated		Not rated
661:						
Millerridge gravelly sandy clay loam--------	45	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Slopes 2 to
						Fragments >
						Permeabilit

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
661:						
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Fragments >
662:						
Millerridge gravelly sandy clay loam	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Fragments >
						Permeabilit
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
663:						
Millerridge gravelly sandy clay loam	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Fragments >
						Permeabilit
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
664:						
Millerridge gravelly sandy clay loam	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Fragments >
						Permeabilit
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
665:						
Surnuf gravelly loam----	40	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Permeabilit
Bigridge loam----------	40	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
666:						
Surnuf gravelly loam----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeabilit
Bigridge loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
667:						
Surnuf gravelly loam----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeabilit
Bigridge loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
668:						
Surnuf gravelly loam----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeabilit
Bigridge loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
669:						
Oroshore gravelly loam--	35	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Permeability .06-.6"/hr	0.28	Permeability .06-.6"/hr	0.28	Surface fra
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	>25%
						Dusty
Mounthope loam----------	25	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
669:						
Dunstone gravelly loam--	20	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Fragments (<3") 25-50%	0.08	Fragments (<3") 25-50%	0.08	Surface fra
						>25%
670:						
Oroshore gravelly loam--	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface fra
		Permeability .06-.6"/hr	0.28	Permeability .06-.6"/hr	0.28	>25%
						Dusty
Mounthope loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Dunstone gravelly loam--	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Surface fra
						>25%
671:						
Oroshore gravelly loam--	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface fra
		Permeability .06-.6"/hr	0.28	Permeability .06-.6"/hr	0.28	>25%
						Dusty
Mounthope loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Dunstone gravelly loam--	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Surface fra
						>25%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
672:						
Oroshore gravelly loam--	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Dusty	0.50	Dusty	0.50	Surface fra
		Permeability .06-.6"/hr	0.28	Permeability .06-.6"/hr	0.28	>25%
						Dusty
Mounthope loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Dunstone gravelly loam--	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Surface fra
						>25%
674:						
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
Bonneyridge sandy loam--	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Rock outcrop, quartz diorite----------	30	Not rated		Not rated		Not rated
675:						
Clearhayes sandy clay loam----------	70	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Saturation from 12 to 30"	0.68	Saturation
		Saturation from 18 to 30" depth	0.95	depth		depth
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Occasional
						Permeabilit
Hamslough clay----------	15	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
676:						
Carhart clay----------	50	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Ponding (an
		Surface clay >= 40%	1.00	Saturation from 12 to 30" depth	0.90	Surface cla
Anita taxadjunct clay---	40	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
677:						
Tuscan gravelly loam----	40	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Surface fra
		Dusty	0.50	Dusty	0.50	>25%
						Dusty
Fallager loam----------	25	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Dusty
Anita, gravelly duripan	15	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Depth to pan <= 20"	1.00	Depth to pan <= 20"	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Surface cla
679:						
Lucksev loam----------	40	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Dusty
Butteside gravelly loam	35	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 6%
		Permeability .06-.6"/hr	0.49	Permeability .06-.6"/hr	0.49	Surface fra
						>25%
						Dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
679:						
Carhart clay----------	15	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Surface clay >= 40%	1.00	Saturation
		Surface clay >= 40%	1.00	Saturation from 12 to 30"	0.90	Surface cla
		Permeability .06-.6"/hr	0.50	depth		Slopes 2 to
				Permeability .06-.6"/hr	0.50	
680:						
Lucksev loam----------	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Dusty
Butteside gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Surface fra
		Dusty	0.50	Dusty	0.50	>25%
						Fragments >
683:						
Typic Haploxeralfs, magnesic, low elevation	50	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
		Fragments (<3") > 50%	0.99	Fragments (<3") > 50%	0.99	>25%
		Dusty	0.50	Dusty	0.50	Slopes > 6%
						Fragments >
Earlal very gravelly loam----------	20	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Dusty	0.50	Dusty	0.50	Slopes > 6%
Rock outcrop, serpentinite----------	15	Not rated		Not rated		Not rated
684:						
Typic Haploxeralfs, magnesic, low elevation	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
		Fragments (<3") > 50%	0.99	Fragments (<3") > 50%	0.99	>25%
						Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
684:						
Earlal very gravelly loam	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated
685:						
Bosquejo taxadjunct, gravelly substratum	70	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Surface clay >= 40%	1.00	Surface cla
		Surface clay >= 40%	1.00	Permeability .06-.6"/hr	0.50	Permeabilit
686:						
Redsluff taxadjunct clay loam	70	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Permeability .06-.6"/hr	0.35	Permeabilit
		Permeability .06-.6"/hr	0.35			Surface fra 25%
687:						
Xerorthents, shallow	45	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra >25%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Fragments >
Typic Haploxeralfs gravelly loam	40	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%
		Fragments (<3") 25-50%	0.68	Fragments (<3") 25-50%	0.68	Surface fra >25%
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
700:						
Retsongulch very gravelly sandy loam----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
						Bedrock 20-
						2%
Flumewall gravelly sandy loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
701:						
Powellton gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Permeabilit
Obstruction gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic sur thick
702:						
Cerpone gravelly loam---	50	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.37	Slopes 8 to 15%	0.37	Slopes > 6%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
Typic Haploxeralfs, magnesic, very gravelly loam-------------------	20	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
		Fragments (<3") 25-50%	0.56	Fragments (<3") 25-50%	0.56	>25%
		Dusty	0.50	Dusty	0.50	Slopes > 6%
						Fragments >
Earlal very gravelly loam-------------------	15	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Dusty	0.50	Dusty	0.50	Slopes > 6%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
703:						
Cerpone gravelly loam---	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
Typic Haploxeralfs, magnesic, very gravelly loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
		Fragments (<3") 25-50%	0.56	Fragments (<3") 25-50%	0.56	>25%
						Fragments >
Earlal very gravelly loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Rock outcrop, serpentinite----------	15	Not rated		Not rated		Not rated
704:						
Typic Haploxeralfs, magnesic, very gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
		Fragments (<3") 25-50%	0.56	Fragments (<3") 25-50%	0.56	>25%
						Fragments >
Earlal very gravelly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Cerpone gravelly loam---	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
Rock outcrop, serpentinite----------	15	Not rated		Not rated		Not rated

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
705:						
Typic Haploxeralfs, magnesic, very gravelly loam	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Surface fra
		Fragments (<3") 25-50%	0.56	Fragments (<3") 25-50%	0.56	>25%
						Fragments >
Earlal very gravelly loam	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Cerpone gravelly loam	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated
711:						
Dixmine very gravelly loam	45	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Permeabilit
Toadtown loam	40	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.55	Permeability .06-.6"/hr	0.55	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Permeabilit
712:						
Dixmine very gravelly loam	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
Toadtown loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.55	Permeability .06-.6"/hr	0.55	Permeabilit

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
713:						
Dixmine very gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeability
Toadtown loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.55	Permeability .06-.6"/hr	0.55	Permeability
714:						
Dixmine very gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeability
Toadtown loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.55	Permeability .06-.6"/hr	0.55	Permeability
715:						
Logtrain gravelly loam--	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >1
Bottlehill very gravelly loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Fragments >1
						Bedrock 20-4
						2%
Walkermine very gravelly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dept
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >1

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
716:						
Griffgulch very gravelly silt loam-----	40	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.44	Permeability .06-.6"/hr	0.44	Slopes > 6%
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Permeabilit
						Fragments >
Surnuf gravelly loam----	40	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Permeabilit
717:						
Griffgulch very gravelly silt loam-----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.44	Permeability .06-.6"/hr	0.44	Permeabilit
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >
Surnuf gravelly loam----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeabilit
718:						
Griffgulch very gravelly silt loam-----	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.44	Permeability .06-.6"/hr	0.44	Permeabilit
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >
Surnuf gravelly loam----	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeabilit
Spine taxadjunct very cobbly loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
719:						
Griffgulch very gravelly silt loam-----	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.44	Permeability .06-.6"/hr	0.44	Permeabilit
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >
Surnuf gravelly loam----	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeabilit
Spine taxadjunct very cobbly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
720:						
Dystroxerepts extremely gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
						Bedrock 20-
						2%
Haploxeralfs very gravelly loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
Rock outcrop, metavolcanic----------	15	Not rated		Not rated		Not rated
721:						
Haploxerands, granitic till, medial sandy loam	70	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Slopes 8 to 15%	0.96	Slopes 8 to 15%	0.96	Slopes > 6%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
722:						
Haploxerands, granitic till, medial sandy loam	70	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
723:						
Haploxerands, granitic till, medial sandy loam	70	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
724:						
Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 6%
725:						
Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
726:						
Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
727:						
Bonneyridge sandy loam--	85	No limitations		No limitations		Limitations
						Slopes 2 to
728:						
Bonneyridge sandy loam--	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
729:						
Bonneyridge sandy loam--	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
730:						
Tusccoll gravelly loam--	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Fragments >1
Schott very gravelly loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >1
731:						
Tusccoll gravelly loam--	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Fragments >1
Schott very gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >1
732:						
Bonepile taxadjunct, duripan substratum-----	90	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >1
						Slopes 2 to
733:						
Haploxeralfs, terrace, gravelly loam----------	75	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Surface frag
		Fragments (<3") 25-50%	0.39	Fragments (<3") 25-50%	0.39	>25%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Dusty
						Permeability

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
734:						
Haploxerands medial sandy loam----------	55	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Aquic Xerofluvents peaty very fine sandy loam----------	35	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Frequent flooding	0.50	Flooding >
		Dusty	0.50	Dusty	0.50	Slopes 2 to
735:						
Fluvaquents, loamy------	80	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00			
801:						
Obstruction gravelly sandy loam----------	70	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic sur thick
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 6%
802:						
Obskel very gravelly sandy loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
Obstruction gravelly sandy loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic sur thick
803:						
Obskel very gravelly sandy loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
803:						
Obstruction gravelly sandy loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic surf thick
804:						
Obskel very gravelly sandy loam	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
Obstruction gravelly sandy loam	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic surf thick
Retsongulch very gravelly sandy loam	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >1
						Bedrock 20-4 2%
805:						
Bottlehill very gravelly loam	50	Limitations		Limitations		Limitations
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Slopes > 6%
						Fragments >1
						Bedrock 20-4 2%
Walkermine very gravelly loam	20	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dept
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%
		Slopes 8 to 15%	0.84	Slopes 8 to 15%	0.84	Fragments >1

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
805:						
Logtrain gravelly loam--	20	Limitations		Limitations		Limitations
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Slopes > 6%
						Fragments >
806:						
Bottlehill very gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Fragments >
						Bedrock 20-
						2%
Walkermine very gravelly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Logtrain gravelly loam--	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >
807:						
Bottlehill very gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Fragments >
						Bedrock 20-
						2%
Logtrain gravelly loam--	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >
Walkermine very gravelly loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
808:						
Bottlehill very gravelly loam----------	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Fragments >
						Bedrock 20-
						2%
Walkermine very gravelly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Logtrain gravelly loam--	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >
809:						
Walkermine very gravelly loam----------	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Bottlehill very gravelly loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Fragments >
						Bedrock 20-
						2%
Logtrain gravelly loam--	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.19	Fragments >10" .1 to 3%	0.19	Fragments >
Rock outcrop, metavolcanic----------	15	Not rated		Not rated		Not rated

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
810:						
Dixmine very gravelly loam	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
Mac gravelly loam	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Spine very gravelly loam	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
811:						
Powellton gravelly loam	50	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Permeabilit
Toadtown loam	40	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.55	Permeability .06-.6"/hr	0.55	Slopes > 6%
						Permeabilit
812:						
Powellton gravelly loam	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Permeabilit
Toadtown loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.55	Permeability .06-.6"/hr	0.55	Permeabilit
813:						
Powellton gravelly loam	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Permeabilit

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
813:						
Toadtown loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.55	Permeability .06-.6"/hr	0.55	Permeabilit
814:						
Mountyana gravelly loam	80	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.60	Permeability .06-.6"/hr	0.60	Slopes > 6%
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Permeabilit
815:						
Mountyana gravelly loam	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.60	Permeability .06-.6"/hr	0.60	Permeabilit
817:						
Lydon very gravelly medial coarse sandy loam----------	80	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
						Slopes 2 to
						Bedrock 20-
						2%
818:						
Lydon very gravelly medial coarse sandy loam----------	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
						Bedrock 20-
						2%
819:						
Lydon very gravelly medial coarse sandy loam----------	65	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
						Bedrock 20-
						2%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
819:						
Rock outcrop, mudflow breccia	20	Not rated		Not rated		Not rated
820:						
Lydon very gravelly medial coarse sandy loam	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
						Bedrock 20-
						2%
Rock outcrop, mudflow breccia	25	Not rated		Not rated		Not rated
821:						
Lydon very gravelly medial coarse sandy loam	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
						Bedrock 20-
						2%
Rock outcrop, mudflow breccia	30	Not rated		Not rated		Not rated
822:						
Bonepile gravelly medial loam	85	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
						Slopes 2 to
823:						
Bonepile gravelly medial loam	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
824:						
Beecee very gravelly medial loam	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
825:						
Beecee very gravelly medial loam----------	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >1
Lydon very gravelly medial coarse sandy loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
						Bedrock 20-4
						2%
826:						
Redbone gravelly medial sandy loam----------	80	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 6%
827:						
Redbone gravelly medial sandy loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
829:						
Paradiso loam----------	80	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.50	Permeability .06-.6"/hr	0.50	Slopes 2 to
						Permeability
830:						
Paradiso loam----------	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.50	Permeability .06-.6"/hr	0.50	Permeability
831:						
Surnuf gravelly loam----	40	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Permeability

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
831:						
Bigridge loam----------	30	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
Spine very gravelly loam----------	15	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Slopes 8 to 15%	0.04	Slopes 8 to 15%	0.04	Slopes > 6%
832:						
Surnuf gravelly loam----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeabilit
Bigridge loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Spine very gravelly loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
833:						
Surnuf gravelly loam----	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeabilit
Bigridge loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Spine very gravelly loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
834:						
Hietanen gravelly loam--	50	No limitations		No limitations		Limitations
						Slopes 2 to
Mac gravelly loam-------	30	No limitations		No limitations		Limitations
						Slopes > 6%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
835:						
Hietanen gravelly loam--	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Mac gravelly loam-------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
836:						
Hietanen gravelly loam--	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Mac gravelly loam-------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Spine very gravelly loam-------------------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
837:						
Hietanen gravelly loam--	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Spine very gravelly loam-------------------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
Mac gravelly loam-------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
838:						
Dixmine very gravelly loam-------------------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.10	Permeability .06-.6"/hr	0.10	Permeabilit
Spine very gravelly loam-------------------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
838:						
Mac gravelly loam-------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
839:						
Chawanakee gravelly sandy loam----------	55	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock dep
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 6%
Billscabin gravelly sandy loam----------	35	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Slopes > 6%
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Fragments >
841:						
Billscabin gravelly sandy loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Bonneyridge sandy loam--	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
842:						
Billscabin gravelly sandy loam----------	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" >3%	1.00	Fragments >10" >3%	1.00	Fragments >
Bonneyridge sandy loam--	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
846:						
Bonneyridge sandy loam--	60	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
Lewisflat loam----------	20	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
847:						
Bonneyridge sandy loam--	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Lewisflat loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
848:						
Bonneyridge sandy loam--	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
Lewisflat loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
850:						
Lewisflat loam----------	85	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
						Slopes 2 to
851:						
Lewisflat loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
852:						
Lewisflat loam----------	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
860:						
Toadtown gravelly loam--	60	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic surf thick
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Slopes > 6%
Powellton silt loam-----	20	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Permeability

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
861:						
Toadtown gravelly loam--	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic sur thick
Powellton silt loam-----	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Permeabilit
862:						
Toadtown gravelly loam--	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic sur thick
Powellton silt loam-----	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Permeabilit
863:						
Toadtown gravelly loam--	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic sur thick
Powellton silt loam-----	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Permeabilit
880:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.85	Permeability .06-.6"/hr	0.85	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Permeabilit

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
880:						
Jocal taxadjunct gravelly loam----------	35	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
881:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.85	Permeability .06-.6"/hr	0.85	Permeabilit
Jocal taxadjunct gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
882:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.85	Permeability .06-.6"/hr	0.85	Permeabilit
Jocal taxadjunct gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
883:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Permeability .06-.6"/hr	0.85	Permeability .06-.6"/hr	0.85	Permeabilit
Jocal taxadjunct gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
885:						
Rogerville silt loam----	75	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Slopes > 6%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Permeabilit
886:						
Rogerville silt loam----	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeabilit
892:						
Rogerville silt loam----	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeabilit
893:						
Rogerville silt loam----	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.35	Permeability .06-.6"/hr	0.35	Permeabilit
902:						
Lava flows, Lovejoy basalt----------	50	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam----------	40	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Surface fra
		Very dusty	1.00	Very dusty	1.00	>25%
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Bedrock dep
						Very dusty
903:						
Mudwash gravelly medial sandy loam----------	45	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
Timberisland very gravelly medial sandy loam----------	25	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
903:						
Lavatop gravelly medial fine sandy loam--------	20	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
						Bedrock 20-4
						2%
904:						
Lava flows, Lovejoy basalt-----------------	60	Not rated		Not rated		Not rated
Lavatop gravelly medial fine sandy loam--------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
						Bedrock 20-4
						2%
905:						
Lava flows, Lovejoy basalt-----------------	60	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam-------------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Surface frag
		Very dusty	1.00	Very dusty	1.00	>25%
						Bedrock dept
906:						
Lava flows, Lovejoy basalt-----------------	60	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam-------------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Surface frag
		Very dusty	1.00	Very dusty	1.00	>25%
						Bedrock dept

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
911:						
Endoaquolls loam--------	75	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Flooding >= rare	1.00	Permeability .06-.6"/hr	0.90	Permeabilit
		Permeability .06-.6"/hr	0.90			Occasional
923:						
Powderhouse medial sandy loam----------	45	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
McNair medial coarse sandy loam----------	25	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
Greenwell medial sandy loam----------	20	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
924:						
Powderhouse medial sandy loam----------	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
McNair medial coarse sandy loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
Greenwell medial sandy loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
925:						
Powderhouse medial sandy loam----------	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
925:						
McNair medial coarse sandy loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
Greenwell medial sandy loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
930:						
Shakeridge gravelly medial coarse sandy loam----------	50	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
Timberisland very gravelly medial sandy loam----------	40	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
931:						
Shakeridge gravelly medial coarse sandy loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
Mudwash gravelly medial sandy loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
Timberisland very gravelly medial sandy loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
932:						
Shakeridge gravelly medial coarse sandy loam	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
Mudwash gravelly medial sandy loam	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
933:						
Shakeridge gravelly medial coarse sandy loam	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
934:						
Mudwash gravelly medial sandy loam	80	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
939:						
Fluvaquentic Humaquepts very fine sandy loam	85	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation from 12 to 30" depth	0.94	Saturation
		Flooding >= rare	1.00			Slopes 2 to
		Permeability .06-.6"/hr	0.15	Permeability .06-.6"/hr	0.15	Permeabilit
940:						
Dejonah gravelly loam	50	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
Stagpoint loam	30	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
941:						
Dejonah gravelly loam---	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
Stagpoint loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
942:						
Stagpoint loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
Dejonah gravelly loam---	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
948:						
Stagpoint loam----------	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
Dejonah gravelly loam---	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
949:						
Rogerville taxadjunct fine sandy loam--------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
950:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam--------	40	Limitations		Limitations		Limitations
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Surface frag
		Very dusty	1.00	Very dusty	1.00	>25%
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Bedrock dept
						Very dusty

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		P
		Limitations	Value	Limitations	Value	Limi
950:						
Rock outcrop, olivine basalt, andesite, or mudflow	25	Not rated		Not rated		Not rated
Powderhouse medial sandy loam	20	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Very dusty
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 6%
951:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Surface fra
		Very dusty	1.00	Very dusty	1.00	>25%
						Bedrock dep
Rock outcrop, andesite	25	Not rated		Not rated		Not rated
Powderhouse medial sandy loam	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Very dusty	1.00	Very dusty	1.00	Very dusty
960:						
Surnuf gravelly loam, high elevation	85	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.46	Permeability .06-.6"/hr	0.46	Slopes 2 to
						Permeabilit
961:						
Surnuf gravelly loam, high elevation	85	Limitations		Limitations		Limitations
		Permeability .06-.6"/hr	0.46	Permeability .06-.6"/hr	0.46	Slopes > 6%
		Slopes 8 to 15%	0.37	Slopes 8 to 15%	0.37	Permeabilit
962:						
Surnuf gravelly loam, high elevation	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Permeability .06-.6"/hr	0.46	Permeability .06-.6"/hr	0.46	Permeabilit

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
963:						
Surnuf gravelly loam, high elevation	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%
		Fragments >10" .1 to 3%	0.76	Fragments >10" .1 to 3%	0.76	Fragments >1
		Permeability .06-.6"/hr	0.46	Permeability .06-.6"/hr	0.46	Permeability
990:						
Riverwash, frequently flooded	100	Not rated		Not rated		Not rated
991:						
Xerofluvents sandy loam, frequently flooded	75	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Frequent flooding	0.50	Flooding > c
		Saturation from 18 to 30" depth	0.03	Saturation from 12 to 30" depth	0.02	Slopes 2 to Saturation f depth
995:						
Pits, gravel	100	Not rated		Not rated		Not rated
996:						
Dumps, excavated material	100	Not rated		Not rated		Not rated
997:						
Pits	95	Not rated		Not rated		Not rated
998:						
Dumps, landfill	100	Not rated		Not rated		Not rated
999:						
Water	100	Not rated		Not rated		Not rated

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Pl
		Limitations	Value	Limitations	Value	Limit
DAM:						
Dam, manmade	100	Not rated		Not rated		Not rated

The interpretation for camp areas evaluates the following soil properties at variable depths in the soil: floodi slope; depth to bedrock; depth to a cemented pan; fragments less than, equal to, or more than 3 inches in size; sodiu salinity (EC); a clayey surface layer; Unified classes for a high content of organic matter (PT, OL, and OH); soil du permeability (Ksat) that is too rapid, allowing seepage in some climates.

The interpretation for picnic areas evaluates the following soil properties at variable depths in the soil: floo wetness, slope, depth to bedrock, depth to a cemented pan, salinity (EC), pH, soil dustiness, fragments more than 3 i surface fragments more than 10 inches in size, the amount of sand or clay in the surface layer, Unified classes for a organic matter (PT, OL, and OH), and permeability (Ksat) that is too rapid, allowing seepage in some climates.

The interpretation for playgrounds evaluates the following soil properties at variable depths in the soil: flood wetness, slope, depth to bedrock, depth to a cemented pan, surface fragments more than 10 inches in size, fragments e than 3 inches in size, Unified classes for a high content of organic matter (PT, OL, and OH), soil dustiness, sand or surface layer, pH, salinity (EC), and permeability (Ksat) that is too rapid, allowing seepage in some climates.

Table 15b.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite inves
in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The ra
limitation with the highest value. Only the three highest value limitations are listed. There may be more limita
fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the ab
describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
100:						
Anita clay	60	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Clay in surf
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Depth to par
Galt clay	25	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation <
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in surf
104:						
Bosquejo clay	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in surf
105:						
Busacca clay loam	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
108:						
Tuscan gravelly loam	45	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Depth to par
		Dusty	0.50	Dusty	0.50	Saturation <
						AWC < 2" to
Igo gravelly loam	20	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Depth to par
		Dusty	0.50	Dusty	0.50	Saturation <
						AWC < 2" to
Anita clay	15	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Clay in surf
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Depth to par
109:						
Bosquejo clay loam	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
110:						
Bosquejo silt loam, overwash, occasionally flooded	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Dusty	0.50	Dusty	0.50	Occasional
111yu:						
Auburn loam	40	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dep
						AWC 2-4" to
						Slopes 8 to
Sobrante loam	40	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dep
						Slopes 8 to
114yu:						
Auburn gravelly loam	40	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dep
						AWC 2-4" to
						Slopes 8 to
Sobrante gravelly loam	40	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes 8 to
						Fragments (
						50%
						Bedrock dep
118:						
Xerorthents, tailings	80	No limitations		No limitations		Limitations
						Fragments (
						>50%
						AWC 2-4" to
						Occasional
118co:						
Clear Lake clay, frequently flooded	90	Limitations		Limitations		Limitations
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in sur
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
119:						
Xerorthents, tailings---	70	No limitations		No limitations		Limitations Fragments (>50% AWC 2-4" to Occasional
Urban land----------	30	Not rated		Not rated		Not rated
119yu:						
Auburn gravelly loam----	30	Limitations Slopes > 25% Dusty	 1.00 0.50	Limitations Slopes > 40% Dusty	 1.00 0.50	Limitations Bedrock dep Slopes > 15 AWC 2-4" to
Sobrante gravelly loam--	30	Limitations Slopes > 25% Dusty	 1.00 0.50	Limitations Slopes > 40% Dusty	 1.00 0.50	Limitations Slopes > 15 Fragments (50% Bedrock dep
Rock outcrop----------	20	Not rated		Not rated		Not rated
120:						
Gridley taxadjunct clay loam----------	80	Limitations Ponding (any duration) Saturation from 12 to 24" depth	 1.00 0.86	Limitations Ponding (any duration) Saturation from 12 to 24" depth	 1.00 0.86	Limitations Ponding (an Depth to pa Saturation depth
121:						
Boga loam----------	45	Limitations Ponding (any duration) Dusty	 1.00 0.50	Limitations Ponding (any duration) Dusty	 1.00 0.50	Limitations Ponding (an
Loemstone loam----------	40	Limitations Ponding (any duration) Dusty	 1.00 0.50	Limitations Ponding (any duration) Dusty	 1.00 0.50	Limitations Ponding (an

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
121su:						
Columbia fine sandy loam, frequently flooded	80	Limitations		Limitations		Limitations
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
		Surface sand fractions 70-90% by wt.	0.01	Surface sand fractions 70-90% by wt.	0.01	
125:						
Gridley taxadjunct loam	65	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation from 12 to 24" depth	0.86	Saturation from 12 to 24" depth	0.86	Depth to pa Saturation
		Dusty	0.50	Dusty	0.50	depth
Calcic Haploxerolls sandy loam	20	No limitations		No limitations		Limitations
						Surface EC
126:						
Liveoak sandy loam	85	No limitations		No limitations		No limitation
127:						
Gridley taxadjunct loam	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation from 12 to 24" depth	0.86	Saturation from 12 to 24" depth	0.86	Depth to pa Saturation
		Dusty	0.50	Dusty	0.50	depth
130:						
Eastbiggs loam	80	Limitations		Limitations		Limitations
		Saturation from 12 to 24" depth	0.92	Saturation from 12 to 24" depth	0.92	Saturation depth
		Dusty	0.50	Dusty	0.50	Depth to pa
133:						
Eastbiggs loam	50	Limitations		Limitations		Limitations
		Saturation from 12 to 24" depth	0.92	Saturation from 12 to 24" depth	0.92	Saturation depth
		Dusty	0.50	Dusty	0.50	Depth to pa
Galt clay loam	40	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation Depth to pa

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
136:						
Duric Xerarents, cut----	35	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to par
						Saturation <
Duric Xerarents, fill---	30	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
Eastbiggs fine sandy loam, leveled----------	25	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation from 12 to 24" depth	0.92	Saturation from 12 to 24" depth	0.92	Saturation f depth
						Depth to par
138su:						
Liveoak sandy clay loam	85	No limitations		No limitations		No limitations
139su:						
Liveoak taxadjunct loam, frequently flooded----------	45	Limitations		Limitations		Limitations
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent flo
		Dusty	0.50	Dusty	0.50	
Galt taxadjunct clay loam, frequently flooded----------	40	Limitations		Limitations		Limitations
		Saturation from 12 to 24" depth	0.73	Saturation from 12 to 24" depth	0.73	Depth to par
						Frequent flo
		Frequent flooding	0.50	Frequent flooding	0.50	Saturation f depth
143su:						
Marcum clay loam--------	45	No limitations		No limitations		No limitations
Gridley clay loam-------	40	No limitations		No limitations		Limitations
						Bedrock dept
149yu:						
Flanly sandy loam-------	80	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes 8 to
						Bedrock dept
						Fragments >3

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
150:						
Columbia stratified sand to fine sandy loam	85	Limitations		Limitations		Limitations
		Surface sand fractions > 90% by wt.	1.00	Surface sand fractions > 90% by wt.	1.00	Frequent fl
		Frequent flooding	0.50	Frequent flooding	0.50	Loamy coars
150su:						
Olashes sandy loam------	85	No limitations		No limitations		No limitation
151yu:						
Flanly sandy loam-------	80	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Bedrock dep
						Fragments >
152:						
Gianella fine sandy loam, frequently flooded----------	85	Limitations		Limitations		Limitations
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
153:						
Gianella sandy loam, frequently flooded-----	85	Limitations		Limitations		Limitations
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
154:						
Gianella silt loam, frequently flooded-----	85	Limitations		Limitations		Limitations
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
		Dusty	0.50	Dusty	0.50	
158:						
Gianella fine sandy loam, occasionally flooded----------	85	Limitations		Limitations		Limitations
		Surface sand fractions 70-90% by wt.	0.01	Surface sand fractions 70-90% by wt.	0.01	Occasional

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
160:						
Gianella loam, occasionally flooded---	85	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Occasional f
161:						
Gianella fine sandy loam, rarely flooded---	90	Limitations		Limitations		No limitations
		Surface sand fractions 70-90% by wt.	0.01	Surface sand fractions 70-90% by wt.	0.01	
162:						
Gianella loam, rarely flooded----------	90	Limitations		Limitations		No limitations
		Dusty	0.50	Dusty	0.50	
163yu:						
Holillipah loamy sand---	85	Limitations		Limitations		Limitations
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent flo
		Surface sand fractions 70-90% by wt.	0.36	Surface sand fractions 70-90% by wt.	0.36	AWC 2-4" to
165yu:						
Holland loam----------	40	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 15%
		Slopes 15 - 25%	0.02			
Hoda loam----------	25	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 15%
		Slopes 15 - 25%	0.02			
Hotaw loam----------	20	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 15%
		Slopes 15 - 25%	0.02			Bedrock dept
173yu:						
Hotaw loam----------	45	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 15%
		Slopes 15 - 25%	0.32			Bedrock dept

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
173yu:						
Chawanakee gravelly sandy loam----------	20	Limitations		No limitations		Limitations
		K factor >.35 and slopes > 8%	1.00			Bedrock dep
						AWC < 2" to
		Slopes 15 - 25%	0.32			Slopes > 15
Holland loam----------	15	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 15
		Slopes 15 - 25%	0.32			
175:						
Farwell clay loam, rarely flooded---------	85	No limitations		No limitations		No limitation
176:						
Farwell loam, occasionally flooded---	85	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Occasional
176yu:						
Jocal loam----------	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes 8 to
177:						
Farwell silt loam, occasionally flooded---	85	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Occasional
178:						
Arbuckle gravelly loam--	87	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Fragments (
						50%
179:						
Moda taxadjunct loam----	65	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation
		Dusty	0.50	Dusty	0.50	Depth to pa
Arbuckle gravelly loam--	20	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Fragments (
						50%

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
180:						
Dodgeland silty clay loam, occasionally flooded	85	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation
						Occasional
181:						
Dodgeland silty clay loam, frequently flooded	80	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
188yu:						
Mariposa taxadjunct gravelly loam	80	Limitations		Limitations		Limitations
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15
		Dusty	0.50			Bedrock dep
						AWC 2-4" to
189:						
Esquon silt loam, overwash	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Dusty	0.50	Dusty	0.50	
189yu:						
Mariposa taxadjunct gravelly loam	80	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Dusty	0.50	Dusty	0.50	Bedrock dep
						AWC 2-4" to
196yu:						
Mildred cobbly loam	80	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		K factor >.35 and slopes > 8%	1.00	Dusty	0.50	Bedrock dep
						Fragments >
		Dusty	0.50			

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
200:						
Parrott silt loam, occasionally flooded---	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Dusty	0.50	Dusty	0.50	Occasional
201:						
Parrott silt loam, frequently flooded-----	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
		Dusty	0.50	Dusty	0.50	
203:						
Kusalslough silty clay loam, occasionally flooded----------	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
						Occasional
205:						
Parrott silt loam, frequently flooded-----	50	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
		Dusty	0.50	Dusty	0.50	
Vermet silt loam, frequently flooded-----	35	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
206:						
Islandbar sandy loam----	60	No limitations		No limitations		Limitations
						AWC 2-4" to
						Slopes 8 to
Chawanakee gravelly sandy loam----------	30	No limitations		No limitations		Limitations
						Bedrock dep
						AWC < 2" to
						Slopes 8 to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
207:						
Islandbar sandy loam----	60	Limitations		No limitations		Limitations
		K factor >.35 and slopes > 8%	1.00			Slopes > 15
		Slopes 15 - 25%	0.82			AWC 2-4" to
Chawanakee gravelly sandy loam----------	30	Limitations		No limitations		Limitations
		K factor >.35 and slopes > 8%	1.00			Bedrock dep
		Slopes > 25%	1.00			Slopes > 15
						AWC < 2" to
208:						
Islandbar sandy loam----	60	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		K factor >.35 and slopes > 8%	1.00			AWC 2-4" to
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		K factor >.35 and slopes > 8%	1.00			Slopes > 15
						AWC < 2" to
209:						
Islandbar sandy loam----	60	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		K factor >.35 and slopes > 8%	1.00			AWC 2-4" to
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		K factor >.35 and slopes > 8%	1.00			Slopes > 15
						AWC < 2" to
210:						
Featherfalls sandy loam	50	No limitations		No limitations		Limitations
						Slopes 8 to
Islandbar sandy loam----	35	No limitations		No limitations		Limitations
						AWC 2-4" to
						Slopes 8 to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
211:						
Featherfalls sandy loam	55	Limitations		Limitations		Limitations
		K factor >.35 and slopes > 8%	1.00	Slopes 25 to 40%	0.08	Slopes > 15
		Slopes > 25%	1.00			
Islandbar sandy loam----	35	Limitations		No limitations		Limitations
		K factor >.35 and slopes > 8%	1.00			Slopes > 15
						AWC 2-4" to
		Slopes 15 - 25%	0.82			
212:						
Featherfalls sandy loam	55	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		K factor >.35 and slopes > 8%	1.00			
Islandbar sandy loam----	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		K factor >.35 and slopes > 8%	1.00			AWC 2-4" to
213:						
Featherfalls sandy loam	45	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		K factor >.35 and slopes > 8%	1.00			
Islandbar sandy loam----	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		K factor >.35 and slopes > 8%	1.00			AWC 2-4" to
214:						
Crystalhill gravelly coarse sandy loam------	35	No limitations		No limitations		Limitations
						AWC 2-4" to
						Slopes 8 to
Oregongulch gravelly sandy loam-------------	20	No limitations		No limitations		Limitations
						AWC < 2" to
						Bedrock dep
						Slopes 8 to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
214:						
Craigsaddle coarse sandy loam	20	No limitations		No limitations		No limitation
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated
215:						
Crystalhill gravelly coarse sandy loam	35	Limitations Slopes 15 - 25%	 0.82	No limitations		Limitations Slopes > 15 AWC 2-4" to
Oregongulch gravelly sandy loam	20	Limitations Slopes 15 - 25%	 0.82	No limitations		Limitations Slopes > 15 AWC < 2" to Bedrock dep
Craigsaddle coarse sandy loam	20	Limitations K factor >.35 and slopes > 8% Slopes 15 - 25%	 1.00 0.82	No limitations		Limitations Slopes > 15
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated
216:						
Crystalhill gravelly coarse sandy loam	35	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15 AWC 2-4" to
Oregongulch gravelly sandy loam	20	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15 AWC < 2" to Bedrock dep

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
216:						
Craigsaddle coarse sandy loam	20	Limitations Slopes > 25% K factor >.35 and slopes > 8%	 1.00 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated
217:						
Crystalhill gravelly coarse sandy loam	35	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15 AWC 2-4" to
Oregongulch gravelly sandy loam	20	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15 AWC < 2" to Bedrock dep
Craigsaddle coarse sandy loam	20	Limitations Slopes > 25% K factor >.35 and slopes > 8%	 1.00 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated
218:						
Rock outcrop, quartz diorite	60	Not rated		Not rated		Not rated
Lithic Xerorthents gravelly sandy loam	20	Limitations K factor >.35 and slopes > 8% Slopes > 25% Fragments >10" >3%	 1.00 1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	 1.00 1.00	Limitations Bedrock dep AWC < 2" to Slopes > 15

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
218:						
Chawanakee gravelly sandy loam----------	15	Limitations		Limitations		Limitations
		K factor >.35 and slopes > 8%	1.00	Slopes 25 to 40%	0.22	Bedrock dep
		Slopes > 25%	1.00			AWC < 2" to
						Slopes > 15
219:						
Rock outcrop, quartz diorite----------	60	Not rated		Not rated		Not rated
Lithic Xerorthents gravelly sandy loam----	20	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		K factor >.35 and slopes > 8%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15
		Fragments >10" >3%	1.00			AWC < 2" to
Chawanakee gravelly sandy loam----------	15	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		K factor >.35 and slopes > 8%	1.00			Slopes > 15
						AWC < 2" to
220:						
Esquon clay, frequently flooded----------	60	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in sur
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
Clear Lake silty clay loam, overwash---------	30	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
221yu:						
Sites loam----------	85	Limitations		Limitations		No limitation
		Dusty	0.50	Dusty	0.50	
222yu:						
Sites loam----------	85	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes 8 to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
225yu:						
Sites gravelly loam, bedrock substratum-----	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Fragments (50%
226yu:						
Sites gravelly loam, bedrock substratum-----	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes 8 to
						Fragments (50%
227yu:						
Sites gravelly loam, bedrock substratum-----	80	Limitations		Limitations		Limitations
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15
		Dusty	0.50			Fragments (50%
242yu:						
Surnuf loam------------	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	AWC < 2" to
						Slopes 8 to
243yu:						
Surnuf loam------------	80	Limitations		Limitations		Limitations
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15
		Dusty	0.50			AWC < 2" to
244yu:						
Surnuf loam------------	80	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Dusty	0.50	Dusty	0.50	AWC < 2" to
245:						
Surnuf loam------------	80	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Dusty	0.50	Dusty	0.50	AWC < 2" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
248yu:						
Trainer loam----------	85	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Occasional f
250:						
Llanoseco, occasionally flooded----------	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
						Occasional f
252:						
Whitecabin silty clay, occasionally flooded---	60	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in surf
						Occasional f
Ordferry silty clay, occasionally flooded---	25	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation <
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in surf
252yu:						
Woodleaf gravelly loam--	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Fragments >3
						Bedrock dept
						Slopes 8 to
253yu:						
Woodleaf gravelly loam--	80	Limitations		Limitations		Limitations
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%
		Dusty	0.50			Fragments >3
						Bedrock dept
255:						
Whitecabin silty clay loam, occasionally flooded----------	60	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
						Occasional f

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
255:						
Ordferry silty clay, occasionally flooded---	30	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in sur
256:						
Whitecabin silt loam, occasionally flooded---	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Dusty	0.50	Dusty	0.50	Occasional
257:						
Llanoseco, frequently flooded----------	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
258:						
Codora, occasionally flooded----------	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
						Occasional
260:						
Ordferry silty clay, occasionally flooded---	90	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in sur
280:						
Columbia taxadjunct stratified very fine sandy loam----------	80	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
290:						
Perkins gravelly loam---	90	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Fragments (
						50%

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
300:						
Redsluff gravelly loam--	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Fragments (g
						50%
301:						
Wafap gravelly loam-----	70	Limitations		Limitations		Limitations
		Saturation from 12 to 24" depth	0.78	Saturation from 12 to 24" depth	0.78	AWC 2-4" to Saturation f
		Dusty	0.50	Dusty	0.50	depth
						Fragments >3
Hamslough clay----------	15	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation <
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in surf
302:						
Redtough loam----------	50	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Depth to par
		Dusty	0.50	Dusty	0.50	Saturation <
						AWC < 2" to
Redswale cobbly loam----	35	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to par
		Dusty	0.50	Dusty	0.50	Saturation <
303:						
Munjar gravelly loam----	60	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	AWC 2-4" to
		Saturation from 12 to 24" depth	0.18	Saturation from 12 to 24" depth	0.18	Depth to par Saturation f
						depth
Tuscan taxadjunct gravelly clay loam-----	20	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Saturation <
						Depth to par
						AWC 2-4" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
303:						
Galt clay	10	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation <
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in surf
304:						
Redtough loam	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Depth to par
						AWC < 2" to
						Slopes > 15%
305:						
Redtough gravelly loam	45	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Depth to par
		Dusty	0.50	Dusty	0.50	Saturation <
						AWC 2-4" to
Redswale loam	25	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to par
		Dusty	0.50	Dusty	0.50	Saturation <
Anita, gravelly duripan	20	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to par
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Saturation <
306:						
Duric Xerarents, fill	50	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation <
		Dusty	0.50	Dusty	0.50	
Duric Xerarents, cut	40	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to par
						Saturation <
307:						
Duric Xerarents clay loam, leveled	70	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to par
						Saturation <

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
310:						
Kimball loam	85	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	AWC 2-4" to
317:						
Thompsonflat loam	75	Limitations		Limitations		No limitations
		Dusty	0.50	Dusty	0.50	
318:						
Thompsonflat fine sandy loam	50	No limitations		No limitations		Limitations
						AWC 2-4" to
Oroville gravelly fine sandy loam	40	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation from 12 to 24" depth	0.98	Saturation from 12 to 24" depth	0.98	Saturation f depth
						Depth to par
320:						
Vistarobles sandy loam	50	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to par
						Saturation <
Redding loam	40	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Depth to par
321:						
Durixeralfs, fine-loamy, gravelly fine sandy loam	50	Limitations		Limitations		Limitations
		Saturation from 12 to 24" depth	0.18	Saturation from 12 to 24" depth	0.18	Depth to par
						Fragments (g 50%
						AWC 2-4" to
Durixeralfs, loamy-skeletal, gravelly fine sandy loam	20	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to par
						Saturation <

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
321:						
Typic Petraquepts silty clay	15	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to pa
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Saturation
330:						
Wilsoncreek loam, occasionally flooded	60	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Occasional
Trainer loam, occasionally flooded	25	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Occasional
331:						
Thompsonflat loam	85	Limitations		Limitations		Limitations
		Slopes 15 - 25%	0.50	Dusty	0.50	Slopes > 15
		Dusty	0.50			
335:						
Galt clay loam	85	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation
						Depth to pa
336:						
Galt clay	90	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in sur
337:						
Galt clay loam	85	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation
						Depth to pa
338:						
Oxyaquic Xerofluvents silt loam	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Dusty	0.50	Dusty	0.50	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
339:						
Oxyaquic Xerofluvents sandy loam, frequently flooded	90	Limitations Ponding (any duration) Frequent flooding	 1.00 0.50	Limitations Ponding (any duration) Frequent flooding	 1.00 0.50	Limitations Ponding (an Frequent fl
340:						
Rock outcrop, Lovejoy basalt	35	Not rated		Not rated		Not rated
Thermalrocks very gravelly loam	25	No limitations		No limitations		Limitations Bedrock dep AWC < 2" to Fragments >
Campbellhills gravelly loam	20	Limitations Saturation < 12" depth Dusty	 1.00 0.50	Limitations Saturation < 12" depth Dusty	 1.00 0.50	Limitations Saturation Fragments > AWC 2-4" to
341:						
Elsey loam	25	Limitations Saturation from 12 to 24" depth	 0.78	Limitations Saturation from 12 to 24" depth	 0.78	Limitations Saturation depth Bedrock dep
Beatsonhollow gravelly loam	25	Limitations Saturation < 12" depth Ponding (any duration) Dusty	 1.00 1.00 0.50	Limitations Saturation < 12" depth Ponding (any duration) Dusty	 1.00 1.00 0.50	Limitations Bedrock dep Ponding (an Saturation
Campbellhills gravelly loam	20	Limitations Saturation < 12" depth Dusty	 1.00 0.50	Limitations Saturation < 12" depth Dusty	 1.00 0.50	Limitations Saturation Fragments > AWC 2-4" to
Rock outcrop, Lovejoy basalt	20	Not rated		Not rated		Not rated

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
342:						
Thermalrocks very gravelly loam----------	40	Limitations Slopes 15 - 25%	 0.50	No limitations		Limitations Bedrock dep AWC < 2" to Slopes > 15
Beatsonhollow taxadjunct fine sandy loam----------	35	Limitations Saturation < 12" depth	 1.00	Limitations Saturation < 12" depth	 1.00	Limitations Bedrock dep Saturation AWC 2-4" to
Rock outcrop, Lovejoy basalt----------	15	Not rated		Not rated		Not rated
343:						
Coalcanyon very cobbly loam----------	50	Limitations Fragments >10" .1 to 3% Dusty Fragments >3" 25 to 75%	 0.76 0.50 0.32	Limitations Surface fragments (>10") .1-3% coverage Dusty Surface fragments (>3") 25-75%	 0.76 0.50 0.32	Limitations Fragments > AWC 2-4" to Slopes 8 to
Coonhollow gravelly loam----------	35	Limitations Fragments >10" >3% Dusty	 1.00 0.50	Limitations Surface fragments (>10") >3% coverage Dusty	 1.00 0.50	Limitations AWC 2-4" to Fragments > Slopes 8 to
344:						
Coalcanyon very cobbly loam----------	45	Limitations Slopes 15 - 25% Fragments >10" .1 to 3% Dusty	 0.82 0.76 0.50	Limitations Surface fragments (>10") .1-3% coverage Dusty Surface fragments (>3") 25-75%	 0.76 0.50 0.32	Limitations Slopes > 15 Fragments > AWC 2-4" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
344:						
Coonhollow gravelly loam	30	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Slopes > 15
		Slopes 15 - 25%	0.82	>3% coverage		AWC 2-4" to
		Dusty	0.50	Dusty	0.50	Fragments >
Rock outcrop, Lovejoy basalt	15	Not rated		Not rated		Not rated
346:						
Cherotable loam	50	Limitations		Limitations		No limitation
		Dusty	0.50	Dusty	0.50	
Elsey loam	35	Limitations		Limitations		Limitations
		Saturation from 12 to 24" depth	0.78	Saturation from 12 to 24" depth	0.78	Saturation depth
						Bedrock dep
347:						
Haplic Palexeralfs loam	90	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Occasional
						AWC 2-4" to
353:						
Cherokeespring gravelly silt loam	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes 8 to
						Fragments (
						50%
355:						
Coalcanyon very cobbly loam	55	Limitations		Limitations		Limitations
		Slopes 15 - 25%	0.82	Surface fragments (>10")	0.76	Slopes > 15
		Fragments >10" .1 to 3%	0.76	.1-3% coverage		Fragments >
		Dusty	0.50	Dusty	0.50	AWC 2-4" to
				Surface fragments (>3") 25-75%	0.32	
Talus	35	Not rated		Not rated		Not rated

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
356:						
Coalcanyon very cobbly loam	45	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10")	0.76	Fragments >
		Dusty	0.50	.1-3% coverage		AWC 2-4" to
				Dusty	0.50	
Rock outcrop, basalt cliffs	20	Not rated		Not rated		Not rated
Talus	20	Not rated		Not rated		Not rated
Coonhollow gravelly loam	10	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	AWC 2-4" to
		Dusty	0.50	>3% coverage		Fragments >
				Dusty	0.50	
360:						
Typic Xerofluvents, coarse-loamy	45	Limitations		Limitations		Limitations
		Surface sand fractions 70-90% by wt.	0.76	Surface sand fractions 70-90% by wt.	0.76	AWC 2-4" to
						Fragments (
						50%
Typic Xerofluvents, sandy-skeletal	40	Limitations		Limitations		Limitations
		Surface sand fractions 70-90% by wt.	0.82	Surface sand fractions 70-90% by wt.	0.82	AWC < 2" to
						Fragments (
						50%
						Loamy coars
361:						
Typic Xerofluvents, sandy-skeletal	85	Limitations		Limitations		Limitations
		Surface sand fractions 70-90% by wt.	0.82	Surface sand fractions 70-90% by wt.	0.82	AWC < 2" to
						Fragments (
						50%
						Loamy coars

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
362:						
Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	No limitations		No limitations		No limitation
Ultic Haploxeralfs, sandstone, low elevation, deep--------	25	No limitations		No limitations		No limitation
363:						
Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	No limitations		No limitations		No limitation
Ultic Haploxeralfs, sandstone, low elevation, deep--------	30	No limitations		No limitations		Limitations Slopes 8 to
364:						
Ultic Haploxeralfs, sandstone, low elevation, deep--------	50	Limitations Slopes 15 - 25%	 0.18	No limitations		Limitations Slopes > 15
Ultic Haploxeralfs, sandstone, low elevation, very deep---	40	Limitations K factor >.35 and slopes > 8% Slopes 15 - 25%	 1.00 0.82	No limitations		Limitations Slopes > 15
365:						
Palexerults gravelly loam-------------------	80	Limitations Slopes 15 - 25% Dusty	 0.50 0.50	Limitations Dusty	 0.50	Limitations Slopes > 15 Fragments >
366:						
Palexerults gravelly loam-------------------	80	Limitations Slopes > 25% Dusty	 1.00 0.50	Limitations Slopes > 40% Dusty	 1.00 0.50	Limitations Slopes > 15 Fragments >

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc f
		Limitations	Value	Limitations	Value	Limit
370:						
Palexerults gravelly loam	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Fragments >3
375:						
Wickscorner loam	80	Limitations		Limitations		No limitations
		Dusty	0.50	Dusty	0.50	
376:						
Flagcanyon gravelly loam	50	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	AWC 2-4" to
						Depth to par
						Fragments >3
Wickscorner loam	35	Limitations		Limitations		No limitations
		Dusty	0.50	Dusty	0.50	
377:						
Flagcanyon taxadjunct fine sandy loam	55	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation from 12 to 24" depth	0.73	Saturation from 12 to 24" depth	0.73	Saturation f depth
						Depth to par
Durixeralfs, clayey-skeletal, loam	20	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to par
		Dusty	0.50	Dusty	0.50	Saturation <
Duraquerts gravelly clay	15	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation <
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in surf

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
400:						
Subaco taxadjunct clay--	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Clay in surf
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Ponding (any
		Saturation from 12 to 24" depth	0.14	Saturation from 12 to 24" depth	0.14	Saturation f depth
415:						
Ignord fine sandy loam--	90	No limitations		No limitations		No limitations
416:						
Calcic Haploxerolls sandy loam----------	90	No limitations		No limitations		Limitations
						Surface EC 6
418:						
Almendra loam----------	85	Limitations		Limitations		No limitations
		Dusty	0.50	Dusty	0.50	
419:						
Conejo fine sandy loam, overwash----------	85	No limitations		No limitations		No limitations
420:						
Conejo clay loam--------	85	No limitations		No limitations		No limitations
425:						
Vina fine sandy loam----	85	Limitations		Limitations		No limitations
		Surface sand fractions 70-90% by wt.	0.01	Surface sand fractions 70-90% by wt.	0.01	
426:						
Vina loam----------	85	Limitations		Limitations		No limitations
		Dusty	0.50	Dusty	0.50	
439:						
Oxyaquic Xerofluvents clay----------	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in surf
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent flo

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
440:						
Oxyaquic Xerofluvents silt loam, frequently flooded	80	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
		Dusty	0.50	Dusty	0.50	
441:						
Oxyaquic Xerofluvents very fine sandy loam	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Dusty	0.50	Dusty	0.50	
442:						
Durixerolls clay loam	55	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation from 12 to 24" depth	0.86	Saturation from 12 to 24" depth	0.86	Saturation depth
						Depth to pa
Haploxerolls clay loam	30	No limitations		No limitations		No limitation
443:						
Durixerolls loam	60	Limitations		Limitations		Limitations
		Saturation from 12 to 24" depth	0.86	Saturation from 12 to 24" depth	0.86	Saturation depth
		Dusty	0.50	Dusty	0.50	Depth to pa
Haploxerolls loam	25	Limitations		Limitations		No limitation
		Dusty	0.50	Dusty	0.50	
445:						
Chico loam	85	Limitations		Limitations		No limitation
		Dusty	0.50	Dusty	0.50	
447:						
Charger fine sandy loam	80	No limitations		No limitations		No limitation
448:						
Haploxerolls clay loam	75	No limitations		No limitations		No limitation

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
449:						
Haploxerolls loam-------	75	Limitations		Limitations		No limitations
		Dusty	0.50	Dusty	0.50	
500:						
Lofgren clay------------	45	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Clay in surf
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Ponding (any
		Saturation from 12 to 24" depth	0.18	Saturation from 12 to 24" depth	0.18	Saturation f depth
Blavo clay--------------	40	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Clay in surf
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Ponding (any
		Saturation from 12 to 24" depth	0.18	Saturation from 12 to 24" depth	0.18	Saturation f depth
501:						
Lofgren clay, occasionally flooded---	45	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Clay in surf
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Ponding (any
		Saturation from 12 to 24" depth	0.18	Saturation from 12 to 24" depth	0.18	Occasional f
Blavo clay, occasionally flooded---	40	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Clay in surf
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Ponding (any
		Saturation from 12 to 24" depth	0.18	Saturation from 12 to 24" depth	0.18	Occasional f
502:						
Blavo silt loam, overwash, occasionally flooded----------	80	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Dusty	0.50	Dusty	0.50	Occasional f
		Saturation from 12 to 24" depth	0.18	Saturation from 12 to 24" depth	0.18	Saturation f depth

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
519:						
Edjobe silty clay-------	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in sur
520:						
Esquon clay-------------	60	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in sur
Neerdobe clay-----------	30	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in sur
		Saturation from 12 to 24" depth	0.18	Saturation from 12 to 24" depth	0.18	Saturation depth
521:						
Neerdobe silt loam, overwash---------------	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Dusty	0.50	Dusty	0.50	
522:						
Clear Lake silty clay loam, overwash---------	80	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
523:						
Esquon silty clay loam, overwash---------------	80	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
525:						
Govstanford loam--------	85	Limitations		Limitations		No limitation
		Dusty	0.50	Dusty	0.50	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
526:						
Govstanford loam, occasionally flooded---	85	Limitations Dusty	 0.50	Limitations Dusty	 0.50	Limitations Occasional
528:						
Neerdobe clay loam------	90	Limitations Ponding (any duration) Saturation from 12 to 24" depth	 1.00 0.94	Limitations Ponding (any duration) Saturation from 12 to 24" depth	 1.00 0.94	Limitations Ponding (an Saturation depth Depth to pa
550:						
Dunstone loam, dry------	60	Limitations Dusty	 0.50	Limitations Dusty	 0.50	Limitations Bedrock dep AWC 2-4" to
Loafercreek silt loam, dry----------	20	Limitations Dusty	 0.50	Limitations Dusty	 0.50	Limitations Bedrock dep Slopes 8 to
551:						
Dunstone loam, dry------	35	Limitations Slopes 15 - 25% Dusty	 0.82 0.50	Limitations Dusty	 0.50	Limitations Bedrock dep Slopes > 15 AWC 2-4" to
Lomarica loam----------	15	Limitations Slopes > 25% Dusty	 1.00 0.50	Limitations Dusty	 0.50	Limitations Slopes > 15 AWC 2-4" to Bedrock dep
Argonaut taxadjunct loam	15	Limitations Slopes 15 - 25% Dusty	 0.82 0.50	Limitations Dusty	 0.50	Limitations Slopes > 15 Bedrock dep
552:						
Dunstone gravelly loam--	45	Limitations Dusty	 0.50	Limitations Dusty	 0.50	Limitations Bedrock dep AWC < 2" to Fragments (50%

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
552:						
Loafercreek gravelly loam----------	40	Limitations		Limitations		Limitations
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	Fragments (g
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	>50%
						Bedrock dept
						Slopes 8 to
553:						
Dunstone gravelly loam--	45	Limitations		Limitations		Limitations
		Slopes 15 - 25%	0.82	Dusty	0.50	Bedrock dept
		Dusty	0.50			Slopes > 15%
						AWC < 2" to
Loafercreek gravelly loam----------	40	Limitations		Limitations		Limitations
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	Slopes > 15%
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	Fragments (g
		Slopes 15 - 25%	0.18			>50%
						Bedrock dept
554:						
Dunstone gravelly loam--	45	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dept
		Dusty	0.50	Dusty	0.50	Slopes > 15%
						AWC < 2" to
Loafercreek gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Surface fragments <3" >65%	1.00	Slopes > 15%
		Surface fragments <3" >65%	1.00	Slopes > 40%	1.00	Fragments (g
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	>50%
						Bedrock dept
555:						
Dunstone gravelly loam--	45	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dept
		Dusty	0.50	Dusty	0.50	Slopes > 15%
						AWC < 2" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
555:						
Loafercreek gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	Fragments (
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	>50% Bedrock dep
556:						
Mounthope loam----------	50	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes 8 to
Hartsmill gravelly loam	40	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	AWC 2-4" to Slopes 8 to
557:						
Mounthope loam----------	50	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			
Hartsmill gravelly loam	40	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			AWC 2-4" to
558:						
Hartsmill gravelly loam	55	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	AWC 2-4" to
Mounthope loam----------	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
559:						
Hartsmill gravelly loam	55	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	AWC 2-4" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
559:						
Mounthope loam----------	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
560:						
Hartsmill gravelly loam	50	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	AWC 2-4" to
Mounthope loam----------	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
561:						
Bigridge loam-----------	50	No limitations		No limitations		Limitations
						AWC 2-4" to
						Slopes 8 to
Minniecreek loam--------	35	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dep
						Slopes 8 to
562:						
Bigridge loam-----------	50	Limitations		No limitations		Limitations
		Slopes 15 - 25%	0.82			Slopes > 15
						AWC 2-4" to
Minniecreek loam--------	35	Limitations		Limitations		Limitations
		Slopes 15 - 25%	0.82	Dusty	0.50	Slopes > 15
		Dusty	0.50			Bedrock dep
563:						
Bigridge loam-----------	50	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
						AWC 2-4" to
Minniecreek loam--------	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Dusty	0.50	Dusty	0.50	Bedrock dep

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
564:						
Bigridge loam----------	50	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
						AWC 2-4" to
Minniecreek loam--------	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Dusty	0.50	Dusty	0.50	Bedrock dept
565:						
Dunstone loam, dry------	35	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dept
						AWC 2-4" to
Argonaut taxadjunct loam	30	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dept
						Slopes 8 to
Sunnyslope loam---------	20	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dept
						AWC < 2" to
566:						
Dunstone loam, dry------	45	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dept
						AWC 2-4" to
Loafercreek silt loam, dry----------	20	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dept
						Slopes 8 to
Katskillhill loam-------	15	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes 8 to
567:						
Dunstone loam, dry------	40	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dept
						AWC 2-4" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
567:						
Loafercreek silt loam, dry	25	Limitations Dusty	 0.50	Limitations Dusty	 0.50	Limitations Bedrock dep Slopes 8 to
Argonaut taxadjunct loam	20	Limitations Dusty	 0.50	Limitations Dusty	 0.50	Limitations Bedrock dep Slopes 8 to
577:						
Parkshill coarse sandy loam	40	No limitations		No limitations		Limitations Slopes 8 to
Flanly loam	25	Limitations Dusty	 0.50	Limitations Dusty	 0.50	Limitations Bedrock dep AWC 2-4" to Slopes 8 to
Hurleton gravelly sandy loam	20	No limitations		No limitations		Limitations AWC < 2" to Bedrock dep Fragments (50%
578:						
Flanly loam	45	Limitations Dusty	 0.50	Limitations Dusty	 0.50	Limitations Bedrock dep AWC 2-4" to Slopes 8 to
Swedesflat cobbly fine sandy loam	35	No limitations		No limitations		Limitations Bedrock dep AWC < 2" to Fragments >
580:						
Surnuf taxadjunct loam	40	No limitations		No limitations		Limitations Slopes 8 to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
580:						
Griffgulch very gravelly silt loam-----	25	Limitations Fragments >10" .1 to 3%	 0.19	Limitations Surface fragments (>10") .1-3% coverage	 0.19	Limitations AWC 2-4" to Slopes 8 to
Rock outcrop, metavolcanic-----------	20	Not rated		Not rated		Not rated
581:						
Surnuf taxadjunct loam--	65	Limitations Slopes > 25%	 1.00	Limitations Slopes 25 to 40%	 0.01	Limitations Slopes > 15%
Griffgulch very gravelly silt loam-----	20	Limitations Slopes > 25% Fragments >10" .1 to 3%	 1.00 0.19	Limitations Surface fragments (>10") .1-3% coverage	 0.19	Limitations Slopes > 15% AWC 2-4" to
582:						
Surnuf taxadjunct loam--	50	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15%
Griffgulch very gravelly silt loam-----	35	Limitations Slopes > 25% Fragments >10" .1 to 3%	 1.00 0.19	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	 1.00 0.19	Limitations Slopes > 15% AWC 2-4" to
583:						
Surnuf taxadjunct loam--	50	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15%
Griffgulch very gravelly silt loam-----	35	Limitations Slopes > 25% Fragments >10" .1 to 3%	 1.00 0.19	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	 1.00 0.19	Limitations Slopes > 15% AWC 2-4" to
584:						
Flanly loam-------------	35	Limitations Slopes 15 - 25% Dusty	 0.98 0.50	Limitations Dusty	 0.50	Limitations Slopes > 15% Bedrock dept AWC 2-4" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
584:						
Swedesflat cobbly fine sandy loam	30	Limitations		No limitations		Limitations
		Slopes 15 - 25%	0.02			Bedrock dep
						Slopes > 15
						AWC < 2" to
Rackerby very gravelly sandy loam	25	Limitations		No limitations		Limitations
		Slopes 15 - 25%	0.68			Bedrock dep
						Slopes > 15
						AWC < 2" to
585:						
Flanly loam	45	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dep
						AWC 2-4" to
						Slopes 8 to
Sommeyflat loam	35	Limitations		Limitations		No limitation
		Dusty	0.50	Dusty	0.50	
586:						
Sommeyflat loam	45	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 15
		Slopes 15 - 25%	0.18			
Mounthope loam	40	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Slopes > 15
		Slopes 15 - 25%	0.82	>3% coverage		
587:						
Sommeyflat loam	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes 25 to 40%	0.78	Slopes > 15
		Dusty	0.50	Dusty	0.50	
Mounthope loam	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	
				>3% coverage		

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
587:						
Hurleton gravelly sandy loam----------	25	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
						AWC < 2" to
						Bedrock dept
588:						
Ultic Haploxeralfs, thermic, high terrace--	95	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	AWC 2-4" to
		Saturation from 12 to 24" depth	0.18	Saturation from 12 to 24" depth	0.18	Saturation f depth
589:						
Ultic Haploxeralfs, thermic, high terrace--	95	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Dusty	0.50	Slopes > 15%
		Dusty	0.50	Slopes 25 to 40%	0.22	AWC 2-4" to
		Saturation from 12 to 24" depth	0.18	Saturation from 12 to 24" depth	0.18	Saturation f depth
590:						
Vistarobles sandy loam--	30	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to par
						Saturation <
Redding loam----------	25	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Depth to par
Argonaut taxadjunct loam	20	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dept
Haploxererts gravelly silty clay----------	15	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (any
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation <
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in surf

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
603:						
Oroville gravelly fine sandy loam----------	30	Limitations Ponding (any duration) Saturation from 12 to 24" depth	 1.00 0.98	Limitations Ponding (any duration) Saturation from 12 to 24" depth	 1.00 0.98	Limitations Ponding (any Saturation f depth Depth to par
Thermalito sandy loam---	25	Limitations Saturation from 12 to 24" depth	 0.92	Limitations Saturation from 12 to 24" depth	 0.92	Limitations Saturation f depth Depth to par AWC 2-4" to
Fernandez sandy loam----	15	No limitations		No limitations		No limitations
Thompsonflat fine sandy loam----------	15	No limitations		No limitations		Limitations AWC 2-4" to
605:						
Duric Xerarents fine sandy loam, leveled----	75	Limitations Saturation < 12" depth Ponding (any duration)	 1.00 1.00	Limitations Saturation < 12" depth Ponding (any duration)	 1.00 1.00	Limitations Ponding (any Depth to par Saturation <
Oroville gravelly fine sandy loam----------	20	Limitations Ponding (any duration) Saturation from 12 to 24" depth	 1.00 0.98	Limitations Ponding (any duration) Saturation from 12 to 24" depth	 1.00 0.98	Limitations Ponding (any Saturation f depth Depth to par
606:						
Redtough loam----------	45	Limitations Saturation < 12" depth Dusty	 1.00 0.50	Limitations Saturation < 12" depth Dusty	 1.00 0.50	Limitations Depth to par Saturation < AWC < 2" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
606:						
Fallager loam----------	30	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to pa
		Dusty	0.50	Dusty	0.50	Saturation
Anita, gravelly duripan	15	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to pa
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Saturation
609:						
Anita, gravelly duripan	50	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to pa
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Saturation
Tuscan taxadjunct gravelly clay loam-----	40	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Saturation
						Depth to pa
						AWC 2-4" to
614:						
Doemill gravelly loam---	50	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Saturation
		Dusty	0.50	>3% coverage		AWC < 2" to
				Dusty	0.50	
Jokerst very cobbly loam	40	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock dep
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Saturation
				>3% coverage		
615:						
Doemill gravelly loam---	50	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Saturation
		Dusty	0.50	>3% coverage		AWC < 2" to
				Dusty	0.50	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
615:						
Jokerst very cobbly loam	40	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock dep
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Saturation
616:						
Jokerst very cobbly loam	35	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Saturation
		Dusty	0.50			AWC < 2" to
				Dusty	0.50	
Doemill gravelly loam---	35	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Bedrock dep
		Saturation < 12" depth	0.99	Saturation < 12" depth	0.99	AWC < 2" to
		Dusty	0.50	Dusty	0.50	Saturation
Typic Haploxeralfs gravelly loam----------	15	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes 8 to
		Dusty	0.50	Dusty	0.50	Fragments (50%
617:						
Doemill gravelly loam---	35	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Bedrock dep
		Saturation from 12 to 24" depth	0.94	Saturation from 12 to 24" depth	0.94	Slopes > 15
		Dusty	0.50	Dusty	0.50	AWC < 2" to
Jokerst very cobbly loam	30	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15
		Dusty	0.50	Dusty	0.50	Saturation

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
617:						
Typic Haploxeralfs gravelly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Surface fragments (>10")	1.00	Slopes > 15%
		Fragments >10" >3%	1.00	>3% coverage		Fragments (g
		Dusty	0.50	Dusty	0.50	50%
619:						
Carhart taxadjunct clay	90	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Clay in surf
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Bedrock dept
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Ponding (any
620:						
Doemill gravelly loam---	40	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock dept
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Saturation <
		Dusty	0.50	>3% coverage		AWC < 2" to
				Dusty	0.50	
Jokerst very cobbly loam	25	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock dept
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Saturation <
				>3% coverage		
Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Fragments >3
		Dusty	0.50	>3% coverage		AWC 2-4" to
				Dusty	0.50	Bedrock dept
621:						
Doemill gravelly loam---	30	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Bedrock dept
		Saturation < 12" depth	0.99	>3% coverage		AWC < 2" to
		Dusty	0.50	Saturation < 12" depth	0.99	Saturation <
				Dusty	0.50	
Jokerst very cobbly loam	30	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock dept
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Saturation <
		Dusty	0.50	>3% coverage		AWC < 2" to
				Dusty	0.50	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
621:						
Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Fragments >
		Dusty	0.50	>3% coverage		AWC 2-4" to
				Dusty	0.50	Slopes 8 to
622:						
Xerorthents, shallow----	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Surface fragments (>10")	1.00	Bedrock dep
		Fragments >10" >3%	1.00	>3% coverage		Slopes > 15
				Slopes 25 to 40%	0.08	AWC < 2" to
Typic Haploxeralfs gravelly loam----------	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Surface fragments (>10")	1.00	Slopes > 15
		Fragments >10" >3%	1.00	>3% coverage		Fragments (
		Dusty	0.50	Dusty	0.50	50%
Rock outcrop, mudflow-breccia cliffs---------	15	Not rated		Not rated		Not rated
623:						
Xerorthents, shallow----	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Slopes > 15
				>3% coverage		AWC < 2" to
Typic Haploxeralfs gravelly loam----------	25	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Fragments (
		Dusty	0.50	>3% coverage		50%
				Dusty	0.50	
Rock outcrop, mudflow-breccia cliffs---------	20	Not rated		Not rated		Not rated
624:						
Ultic Haploxeralfs, mesic, gravelly loam---	60	Limitations		Limitations		Limitations
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10")	0.19	AWC 2-4" to
				.1-3% coverage		

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
624:						
Rockstripe very gravelly loam	25	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Bedrock dep
		Dusty	0.50	>3% coverage		AWC < 2" to
				Dusty	0.50	Fragments >
625:						
Ultic Haploxeralfs, mesic, gravelly loam	50	Limitations		Limitations		Limitations
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10")	0.19	Slopes > 15
		Slopes 15 - 25%	0.08	.1-3% coverage		AWC 2-4" to
Rockstripe very gravelly loam	35	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Bedrock dep
		Dusty	0.50	>3% coverage		Slopes > 15
		Slopes 15 - 25%	0.18	Dusty	0.50	AWC < 2" to
626:						
Ultic Haploxeralfs gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10")	0.76	Fragments (
		Dusty	0.50	.1-3% coverage		50%
				Dusty	0.50	
Rockstripe very gravelly loam	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Slopes > 15
		Dusty	0.50	>3% coverage		AWC < 2" to
				Dusty	0.50	
Rock outcrop, mudflow-breccia cliffs	15	Not rated		Not rated		Not rated
627:						
Ultic Haploxeralfs gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10")	0.76	Fragments (
		Dusty	0.50	.1-3% coverage		50%
				Dusty	0.50	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
627:						
Rockstripe very gravelly loam	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dept
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Slopes > 15%
		Dusty	0.50	>3% coverage		AWC < 2" to
				Dusty	0.50	
Rock outcrop, mudflow-breccia cliffs	15	Not rated		Not rated		Not rated
628:						
Rockstripe very gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dept
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Slopes > 15%
		Dusty	0.50	>3% coverage		AWC < 2" to
				Dusty	0.50	
Ultic Haploxeralfs gravelly loam	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10")	0.76	Fragments (g
		Dusty	0.50	.1-3% coverage		50%
				Dusty	0.50	
Rock outcrop, mudflow-breccia cliffs	20	Not rated		Not rated		Not rated
629:						
Slideland gravelly loam	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes 8 to
						Fragments (g
						50%
630:						
Slideland gravelly loam	80	Limitations		Limitations		Limitations
		Slopes 15 - 25%	0.50	Dusty	0.50	Slopes > 15%
		Dusty	0.50			Fragments (g
						50%

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
631:						
Slideland gravelly loam	80	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Dusty	0.50	Dusty	0.50	Fragments (g
						50%
632:						
Ultic Haploxeralfs, conglomerate, very deep	50	No limitations		No limitations		Limitations
						Slopes 8 to
Ultic Haploxeralfs, conglomerate, moderately deep--------	40	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	AWC < 2" to
				>3% coverage		Bedrock dept
633:						
Ultic Haploxeralfs, conglomerate, very deep	60	Limitations		No limitations		Limitations
		Slopes 15 - 25%	0.50			Slopes > 15%
Ultic Haploxeralfs, conglomerate, moderately deep--------	30	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Slopes > 15%
		Slopes 15 - 25%	0.50	>3% coverage		AWC < 2" to
						Bedrock dept
634:						
Ultic Haploxeralfs, conglomerate, very deep	60	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
Ultic Haploxeralfs, conglomerate, moderately deep--------	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	AWC < 2" to
				>3% coverage		Bedrock dept

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
635:						
Ultic Haploxeralfs, conglomerate, very deep	50	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15%
Ultic Haploxeralfs, conglomerate, moderately deep	40	Limitations Slopes > 25% Fragments >10" >3%	 1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	 1.00 1.00	Limitations Slopes > 15% AWC < 2" to Bedrock dept
636:						
Ultic Haploxeralfs, conglomerate, moderately deep	50	Limitations Slopes > 25% Fragments >10" >3%	 1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	 1.00 1.00	Limitations Slopes > 15% AWC < 2" to Bedrock dept
Ultic Haploxeralfs, conglomerate, very deep	40	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15%
637:						
Ultic Haploxeralfs, sandstone	80	No limitations		No limitations		Limitations Slopes 8 to
638:						
Ultic Haploxeralfs, sandstone	80	Limitations Slopes 15 - 25%	 0.82	No limitations		Limitations Slopes > 15%
639:						
Ultic Haploxeralfs, sandstone	75	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15%
640:						
Ultic Haploxeralfs, sandstone	75	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15%

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
641:						
Ultic Haploxeralfs, sandstone	75	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
642:						
Chinacamp gravelly loam	70	Limitations		Limitations		No limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
643:						
Chinacamp gravelly loam	70	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15%
		Slopes 15 - 25%	0.50			
644:						
Chinacamp gravelly loam	70	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
645:						
Chinacamp gravelly loam	70	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
646:						
Coalcanyon taxadjunct very gravelly loam	80	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Fragments >3
647:						
Coalcanyon taxadjunct very gravelly loam	75	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Slopes > 15%
						Fragments >3
648:						
Coalcanyon taxadjunct very gravelly loam	80	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Dusty	0.50	Dusty	0.50	Fragments >3

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc f
		Limitations	Value	Limitations	Value	Limit
649:						
Coalcanyon taxadjunct very gravelly loam-----	75	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Dusty	0.50	Dusty	0.50	Fragments >3
650:						
Schott very gravelly loam-------------------	65	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	AWC 2-4" to
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
651:						
Schott very gravelly loam-------------------	65	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15%
		Slopes > 25%	1.00	Surface fragments (>10") >3% coverage	1.00	AWC 2-4" to
		Fragments >10" >3%	1.00	Slopes 25 to 40%	0.04	
652:						
Schott very gravelly loam-------------------	65	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15%
		Very dusty	1.00	Slopes > 40%	1.00	AWC 2-4" to
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
Rock outcrop, mudflow breccia-----------------	20	Not rated		Not rated		Not rated
654:						
Coridge bouldery loam---	70	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Bedrock dept
		Dusty	0.50			AWC 2-4" to
		Saturation from 12 to 24" depth	0.22	Dusty	0.50	Fragments >3
				Saturation from 12 to 24" depth	0.22	
Rock outcrop, Cohasset basalt-----------------	20	Not rated		Not rated		Not rated

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
655:						
Coridge bouldery loam---	70	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Bedrock dept
		Dusty	0.50	>3% coverage		AWC 2-4" to
				Dusty	0.50	Fragments >3
Rock outcrop, Cohasset basalt-----------	20	Not rated		Not rated		Not rated
656:						
Rock outcrop, basalt cliffs-----------	40	Not rated		Not rated		Not rated
Coalcanyon taxadjunct very gravelly loam-----	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Dusty	0.50	Slopes > 15%
		Dusty	0.50	Slopes 25 to 40%	0.22	Fragments >3
657:						
Bonneyridge sandy loam--	35	No limitations		No limitations		Limitations
						AWC 2-4" to
Chawanakee gravelly sandy loam----------	30	No limitations		No limitations		Limitations
						Bedrock dept
						AWC < 2" to
Rock outcrop, quartz diorite----------	20	Not rated		Not rated		Not rated
658:						
Bonneyridge sandy loam--	35	Limitations		No limitations		Limitations
		K factor >.35 and slopes > 8%	1.00			Slopes > 15%
						AWC 2-4" to
		Slopes 15 - 25%	0.50			
Chawanakee gravelly sandy loam----------	30	Limitations		No limitations		Limitations
		K factor >.35 and slopes > 8%	1.00			Bedrock dept
						Slopes > 15%
		Slopes 15 - 25%	0.50			AWC < 2" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
658:						
Rock outcrop, quartz diorite	25	Not rated		Not rated		Not rated
659:						
Bonneyridge sandy loam--	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		K factor >.35 and slopes > 8%	1.00			AWC 2-4" to
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dept
		K factor >.35 and slopes > 8%	1.00			Slopes > 15%
						AWC < 2" to
Rock outcrop, quartz diorite	25	Not rated		Not rated		Not rated
660:						
Bonneyridge sandy loam--	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		K factor >.35 and slopes > 8%	1.00			AWC 2-4" to
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dept
		K factor >.35 and slopes > 8%	1.00			Slopes > 15%
						AWC < 2" to
Rock outcrop, quartz diorite	30	Not rated		Not rated		Not rated
661:						
Millerridge gravelly sandy clay loam	45	No limitations		No limitations		Limitations
						Bedrock dept
						Fragments >3

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
661:						
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Bedrock dept AWC < 2" to Fragments >3
662:						
Millerridge gravelly sandy clay loam	45	No limitations		No limitations		Limitations
						Slopes > 15% Bedrock dept Fragments >3
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Bedrock dept
		Slopes > 25%	1.00			Slopes > 15%
				Slopes 25 to 40%	0.14	AWC < 2" to
663:						
Millerridge gravelly sandy clay loam	45	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15% Bedrock dept Fragments >3
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Surface fragments (>10") >3% coverage	1.00	Bedrock dept
		Fragments >10" >3%	1.00			Slopes > 15%
				Slopes > 40%	1.00	AWC < 2" to
664:						
Millerridge gravelly sandy clay loam	45	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15% Bedrock dept Fragments >3

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
664:						
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15
						AWC < 2" to
665:						
Surnuf gravelly loam	40	No limitations		No limitations		Limitations
						Slopes 8 to
Bigridge loam	40	No limitations		No limitations		Limitations
						AWC 2-4" to
						Slopes 8 to
666:						
Surnuf gravelly loam	40	Limitations		No limitations		Limitations
		Slopes 15 - 25%	0.82			Slopes > 15
Bigridge loam	40	Limitations		No limitations		Limitations
		Slopes 15 - 25%	0.82			Slopes > 15
						AWC 2-4" to
667:						
Surnuf gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes 25 to 40%	0.92	Slopes > 15
Bigridge loam	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
						AWC 2-4" to
668:						
Surnuf gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
Bigridge loam	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
						AWC 2-4" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
669:						
Oroshore gravelly loam--	35	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dep
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10") .1-3% coverage	0.19	Fragments (50%
						Slopes 8 to
Mounthope loam----------	25	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes 8 to
Dunstone gravelly loam--	20	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dep
						AWC < 2" to
						Fragments (50%
670:						
Oroshore gravelly loam--	35	Limitations		Limitations		Limitations
		Slopes 15 - 25%	0.50	Dusty	0.50	Slopes > 15
		Dusty	0.50	Surface fragments (>10") .1-3% coverage	0.19	Bedrock dep
		Fragments >10" .1 to 3%	0.19			Fragments (50%
Mounthope loam----------	25	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15
		Slopes 15 - 25%	0.50			
Dunstone gravelly loam--	20	Limitations		Limitations		Limitations
		Slopes 15 - 25%	0.50	Dusty	0.50	Bedrock dep
		Dusty	0.50			Slopes > 15
						AWC < 2" to
671:						
Oroshore gravelly loam--	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Dusty	0.50	Dusty	0.50	Bedrock dep
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10") .1-3% coverage	0.19	Fragments (50%

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
671:						
Mounthope loam----------	25	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
Dunstone gravelly loam--	20	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Slopes > 15
						AWC < 2" to
672:						
Oroshore gravelly loam--	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Dusty	0.50	Dusty	0.50	Bedrock dep
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10") .1-3% coverage	0.19	Fragments (50%
Mounthope loam----------	25	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
Dunstone gravelly loam--	25	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Slopes > 15
						AWC < 2" to
674:						
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		K factor >.35 and slopes > 8%	1.00			Slopes > 15
						AWC < 2" to
Bonneyridge sandy loam--	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		K factor >.35 and slopes > 8%	1.00			AWC 2-4" to
Rock outcrop, quartz diorite----------	30	Not rated		Not rated		Not rated

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
675:						
Clearhayes sandy clay loam	70	Limitations		Limitations		Limitations
		Saturation from 12 to 24" depth	0.32	Saturation from 12 to 24" depth	0.32	Occasional AWC 2-4" to Saturation depth
Hamslough clay	15	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Saturation
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in sur
676:						
Carhart clay	50	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in sur
		Saturation from 12 to 24" depth	0.78	Saturation from 12 to 24" depth	0.78	Saturation depth
Anita taxadjunct clay	40	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock dep
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Saturation
677:						
Tuscan gravelly loam	40	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Depth to pa
		Dusty	0.50	Dusty	0.50	Saturation AWC < 2" to
Fallager loam	25	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to pa
		Dusty	0.50	Dusty	0.50	Saturation
Anita, gravelly duripan	15	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to pa
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Saturation

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
679:						
Lucksev loam----------	40	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Bedrock dep
		Dusty	0.50	Dusty	0.50	Saturation
						AWC 2-4" to
Butteside gravelly loam	35	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Bedrock dep
						Fragments (
						50%
Carhart clay----------	15	Limitations		Limitations		Limitations
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in sur
		Saturation from 12 to 24" depth	0.78	Saturation from 12 to 24" depth	0.78	Saturation depth
						Bedrock dep
680:						
Lucksev loam----------	45	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes 25 to 40%	0.78	Bedrock dep
		Dusty	0.50	Dusty	0.50	Slopes > 15
						AWC 2-4" to
Butteside gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Surface fragments (>10")	0.76	Slopes > 15
		Fragments >10" .1 to 3%	0.76	.1-3% coverage		Bedrock dep
		Dusty	0.50	Dusty	0.50	Fragments (
						50%
683:						
Typic Haploxeralfs, magnesic, low elevation	50	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Fragments (
		Dusty	0.50	>3% coverage		50%
				Dusty	0.50	AWC 2-4" to
						Bedrock dep
Earlal very gravelly loam----------	20	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Bedrock dep
		Dusty	0.50	>3% coverage		AWC < 2" to
				Dusty	0.50	Fragments >

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
683:						
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated
684:						
Typic Haploxeralfs, magnesic, low elevation	50	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			Fragments (50%
		Dusty	0.50	Dusty	0.50	AWC 2-4" to
Earlal very gravelly loam	20	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Bedrock dep
		Slopes 15 - 25%	0.50			Slopes > 15
		Dusty	0.50	Dusty	0.50	AWC < 2" to
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated
685:						
Bosquejo taxadjunct, gravelly substratum	70	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Surface clay >= 40%	1.00	Surface clay >= 40%	1.00	Clay in sur
686:						
Redsluff taxadjunct clay loam	70	No limitations		No limitations		No limitation
687:						
Xerorthents, shallow	45	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Bedrock dep
						AWC < 2" to
						Fragments (50%
Typic Haploxeralfs gravelly loam	40	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Fragments (50%
		Dusty	0.50	Dusty	0.50	Slopes 8 to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
700:						
Retsongulch very gravelly sandy loam----	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	AWC < 2" to Bedrock dep
Flumewall gravelly sandy loam----------	25	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15 AWC < 2" to
701:						
Powellton gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Very dusty	1.00	Very dusty	1.00	
Obstruction gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic sur thick
		Very dusty	1.00	Very dusty	1.00	
702:						
Cerpone gravelly loam---	50	No limitations		No limitations		Limitations
						Slopes 8 to
Typic Haploxeralfs, magnesic, very gravelly loam----------	20	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Fragments (50%
		Dusty	0.50	Dusty	0.50	Fragments > Slopes 8 to
Earlal very gravelly loam----------	15	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Bedrock dep AWC < 2" to
		Dusty	0.50	Dusty	0.50	Fragments >

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
703:						
Cerpone gravelly loam---	30	Limitations		No limitations		Limitations
		Slopes 15 - 25%	0.82			Slopes > 15
Typic Haploxeralfs, magnesic, very gravelly loam----------	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Surface fragments (>10")	1.00	Slopes > 15
		Fragments >10" >3%	1.00	>3% coverage		Fragments (
		Dusty	0.50	Dusty	0.50	50%
						Fragments >
Earlal very gravelly loam----------	15	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Bedrock dep
		Slopes > 25%	1.00	>3% coverage		Slopes > 15
		Dusty	0.50	Dusty	0.50	AWC < 2" to
Rock outcrop, serpentinite----------	15	Not rated		Not rated		Not rated
704:						
Typic Haploxeralfs, magnesic, very gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Fragments (
		Dusty	0.50	>3% coverage		50%
				Dusty	0.50	Fragments >
Earlal very gravelly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Surface fragments (>10")	1.00	Bedrock dep
		Fragments >10" >3%	1.00	>3% coverage		Slopes > 15
		Dusty	0.50	Slopes > 40%	1.00	AWC < 2" to
				Dusty	0.50	
Cerpone gravelly loam---	15	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
704:						
Rock outcrop, serpentinite----------	15	Not rated		Not rated		Not rated
705:						
Typic Haploxeralfs, magnesic, very gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Fragments (
		Dusty	0.50	>3% coverage		50%
				Dusty	0.50	Fragments >
Earlal very gravelly loam----------	25	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Slopes > 15
		Dusty	0.50	>3% coverage		AWC < 2" to
				Dusty	0.50	
Cerpone gravelly loam---	15	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
Rock outcrop, serpentinite----------	15	Not rated		Not rated		Not rated
711:						
Dixmine very gravelly loam----------	45	No limitations		No limitations		Limitations
						Slopes 8 to
Toadtown loam----------	40	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes 8 to
712:						
Dixmine very gravelly loam----------	50	Limitations		No limitations		Limitations
		Slopes 15 - 25%	0.82			Slopes > 15

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
712:						
Toadtown loam----------	40	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15%
		Slopes 15 - 25%	0.82			
713:						
Dixmine very gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
Toadtown loam----------	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15%
		Very dusty	1.00	Slopes > 40%	1.00	
714:						
Dixmine very gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
Toadtown loam----------	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Very dusty	1.00	Very dusty	1.00	
715:						
Logtrain gravelly loam--	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10") .1-3% coverage	0.19	
Bottlehill very gravelly loam----------	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	AWC < 2" to Bedrock dept
Walkermine very gravelly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dept
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15% AWC < 2" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
716:						
Griffgulch very gravelly silt loam-----	40	Limitations		Limitations		Limitations
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10") .1-3% coverage	0.19	AWC 2-4" to
Surnuf gravelly loam----	40	No limitations		No limitations		Limitations
						Slopes 8 to
717:						
Griffgulch very gravelly silt loam-----	40	Limitations		Limitations		Limitations
		Slopes 15 - 25%	0.82	Surface fragments (>10")	0.19	Slopes > 15
		Fragments >10" .1 to 3%	0.19	.1-3% coverage		AWC 2-4" to
Surnuf gravelly loam----	40	Limitations		No limitations		Limitations
		Slopes 15 - 25%	0.82			Slopes > 15
718:						
Griffgulch very gravelly silt loam-----	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10") .1-3% coverage	0.19	AWC 2-4" to
Surnuf gravelly loam----	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
Spine taxadjunct very cobbly loam----------	15	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Slopes > 15
		Dusty	0.50	>3% coverage		AWC < 2" to
				Dusty	0.50	
719:						
Griffgulch very gravelly silt loam-----	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10") .1-3% coverage	0.19	AWC 2-4" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
719:						
Surnuf gravelly loam----	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
Spine taxadjunct very cobbly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dept
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	Slopes > 15%
		Dusty	0.50	>3% coverage		AWC < 2" to
				Dusty	0.50	
720:						
Dystroxerepts extremely gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	AWC 2-4" to
				>3% coverage		Bedrock dept
Haploxeralfs very gravelly loam----------	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	AWC 2-4" to
				>3% coverage		
Rock outcrop, metavolcanic----------	15	Not rated		Not rated		Not rated
721:						
Haploxerands, granitic till, medial sandy loam	70	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes 8 to
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	AWC 2-4" to
				>3% coverage		
722:						
Haploxerands, granitic till, medial sandy loam	70	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15%
		Fragments >10" >3%	1.00	Surface fragments (>10")	1.00	AWC 2-4" to
		Slopes 15 - 25%	0.50	>3% coverage		

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
723:						
Haploxerands, granitic till, medial sandy loam	70	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Surface fragments (>10") >3% coverage	1.00	AWC 2-4" to
		Fragments >10" >3%	1.00	Slopes > 40%	1.00	
724:						
Haploxerands, volcanic till, cobbly medial sandy loam	75	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes 8 to
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	AWC 2-4" to
725:						
Haploxerands, volcanic till, cobbly medial sandy loam	75	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	AWC 2-4" to
		Slopes 15 - 25%	0.50			
726:						
Haploxerands, volcanic till, cobbly medial sandy loam	75	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Surface fragments (>10") >3% coverage	1.00	AWC 2-4" to
		Fragments >10" >3%	1.00	Slopes > 40%	1.00	
727:						
Bonneyridge sandy loam--	85	No limitations		No limitations		Limitations
						AWC 2-4" to
728:						
Bonneyridge sandy loam--	85	Limitations		No limitations		Limitations
		K factor >.35 and slopes > 8%	1.00			Slopes > 15
		Slopes 15 - 25%	0.82			AWC 2-4" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
729:						
Bonneyridge sandy loam--	85	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		K factor >.35 and slopes > 8%	1.00			AWC 2-4" to
730:						
Tusccoll gravelly loam--	60	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	
Schott very gravelly loam----------	25	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	AWC 2-4" to
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
731:						
Tusccoll gravelly loam--	50	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Very dusty	1.00	Very dusty	1.00	
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	
Schott very gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Very dusty	1.00	Very dusty	1.00	AWC 2-4" to
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
732:						
Bonepile taxadjunct, duripan substratum-----	90	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	AWC < 2" to
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
733:						
Haploxeralfs, terrace, gravelly loam----------	75	Limitations		Limitations		Limitations
		Dusty	0.50	Dusty	0.50	Fragments (50%
						AWC 2-4" to
						Fragments >
734:						
Haploxerands medial sandy loam----------	55	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
						AWC 2-4" to
Aquic Xerofluvents peaty very fine sandy loam----------	35	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Saturation
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent fl
		Dusty	0.50	Dusty	0.50	
735:						
Fluvaquents, loamy------	80	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Saturation
801:						
Obstruction gravelly sandy loam----------	70	Limitations		Limitations		Limitations
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic sur thick
		Very dusty	1.00	Very dusty	1.00	Slopes 8 to
802:						
Obskel very gravelly sandy loam----------	40	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes > 25%	1.00			AWC 2-4" to
Obstruction gravelly sandy loam----------	40	Limitations		Limitations		Limitations
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Slopes > 15
		Very dusty	1.00	Very dusty	1.00	Organic sur thick
		Slopes 15 - 25%	0.82			

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
803:						
Obskel very gravelly sandy loam	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15%
		Very dusty	1.00	Slopes > 40%	1.00	AWC 2-4" to
Obstruction gravelly sandy loam	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Organic surface layer >= 4" thick	1.00	Slopes > 15%
		Organic surface layer >= 4" thick	1.00	Very dusty	1.00	Organic surf thick
		Very dusty	1.00	Slopes > 40%	1.00	
804:						
Obskel very gravelly sandy loam	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Very dusty	1.00	Very dusty	1.00	AWC 2-4" to
Obstruction gravelly sandy loam	25	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic surf thick
		Very dusty	1.00	Very dusty	1.00	
Retsongulch very gravelly sandy loam	20	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	AWC < 2" to Bedrock dept
805:						
Bottlehill very gravelly loam	50	Limitations		Limitations		Limitations
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	AWC < 2" to Bedrock dept
Walkermine very gravelly loam	20	Limitations		Limitations		Limitations
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Bedrock dept AWC < 2" to Slopes 8 to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
805:						
Logtrain gravelly loam--	20	Limitations Fragments >10" .1 to 3%	 0.19	Limitations Surface fragments (>10") .1-3% coverage	 0.19	No limitation
806:						
Bottlehill very gravelly loam----------	50	Limitations Slopes 15 - 25% Fragments >10" .1 to 3%	 0.82 0.76	Limitations Surface fragments (>10") .1-3% coverage	 0.76	Limitations Slopes > 15 AWC < 2" to Bedrock dep
Walkermine very gravelly loam----------	20	Limitations Slopes > 25% Fragments >10" >3%	 1.00 1.00	Limitations Surface fragments (>10") >3% coverage Slopes 25 to 40%	 1.00 0.08	Limitations Bedrock dep Slopes > 15 AWC < 2" to
Logtrain gravelly loam--	20	Limitations Slopes > 25% Fragments >10" .1 to 3%	 1.00 0.19	Limitations Surface fragments (>10") .1-3% coverage	 0.19	Limitations Slopes > 15
807:						
Bottlehill very gravelly loam----------	35	Limitations Slopes > 25% Fragments >10" .1 to 3%	 1.00 0.76	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	 1.00 0.76	Limitations Slopes > 15 AWC < 2" to Bedrock dep
Logtrain gravelly loam--	30	Limitations Slopes > 25% Fragments >10" .1 to 3%	 1.00 0.19	Limitations Slopes > 40% Surface fragments (>10") .1-3% coverage	 1.00 0.19	Limitations Slopes > 15
Walkermine very gravelly loam----------	25	Limitations Slopes > 25% Fragments >10" >3%	 1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	 1.00 1.00	Limitations Bedrock dep Slopes > 15 AWC < 2" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
808:						
Bottlehill very gravelly loam----------	45	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	AWC < 2" to Bedrock dep
Walkermine very gravelly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15 AWC < 2" to
Logtrain gravelly loam--	20	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10") .1-3% coverage	0.19	
809:						
Walkermine very gravelly loam----------	45	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	Slopes > 15 AWC < 2" to
Bottlehill very gravelly loam----------	15	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	AWC < 2" to Bedrock dep
Logtrain gravelly loam--	15	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" .1 to 3%	0.19	Surface fragments (>10") .1-3% coverage	0.19	
Rock outcrop, metavolcanic----------	15	Not rated		Not rated		Not rated
810:						
Dixmine very gravelly loam--------------------	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes 25 to 40%	0.86	Slopes > 15

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
810:						
Mac gravelly loam-------	25	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
						Bedrock dep
Spine very gravelly loam--------------------	25	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dep
						Slopes > 15
						AWC < 2" to
811:						
Powellton gravelly loam	50	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
Toadtown loam-----------	40	Limitations		Limitations		No limitation
		Very dusty	1.00	Very dusty	1.00	
812:						
Powellton gravelly loam	50	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			
Toadtown loam-----------	40	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			
813:						
Powellton gravelly loam	50	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	
Toadtown loam-----------	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	
814:						
Mountyana gravelly loam	80	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes 8 to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
815:						
Mountyana gravelly loam	80	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			
817:						
Lydon very gravelly medial coarse sandy loam	80	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	AWC < 2" to
						Bedrock dep
818:						
Lydon very gravelly medial coarse sandy loam	75	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			AWC < 2" to
						Bedrock dep
819:						
Lydon very gravelly medial coarse sandy loam	65	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	AWC < 2" to
						Bedrock dep
Rock outcrop, mudflow breccia	20	Not rated		Not rated		Not rated
820:						
Lydon very gravelly medial coarse sandy loam	60	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Very dusty	1.00	Very dusty	1.00	AWC < 2" to
						Bedrock dep
Rock outcrop, mudflow breccia	25	Not rated		Not rated		Not rated

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
821:						
Lydon very gravelly medial coarse sandy loam	55	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Very dusty	1.00	Very dusty	1.00	AWC < 2" to
						Bedrock dep
Rock outcrop, mudflow breccia	30	Not rated		Not rated		Not rated
822:						
Bonepile gravelly medial loam	85	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	AWC 2-4" to
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
823:						
Bonepile gravelly medial loam	85	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	AWC 2-4" to
		Slopes 15 - 25%	0.82			
824:						
Beecee very gravelly medial loam	85	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	AWC 2-4" to
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
825:						
Beecee very gravelly medial loam	60	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Very dusty	1.00	Very dusty	1.00	AWC 2-4" to
		Fragments >10" >3%	1.00	Surface fragments (>10") >3% coverage	1.00	
Lydon very gravelly medial coarse sandy loam	20	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Very dusty	1.00	Very dusty	1.00	AWC < 2" to
						Bedrock dep

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
826:						
Redbone gravelly medial sandy loam----------	80	Limitations Very dusty	 1.00	Limitations Very dusty	 1.00	Limitations Slopes 8 to AWC 2-4" to
827:						
Redbone gravelly medial sandy loam----------	80	Limitations Very dusty Slopes 15 - 25%	 1.00 0.82	Limitations Very dusty	 1.00	Limitations Slopes > 15 AWC 2-4" to
829:						
Paradiso loam----------	80	Limitations Very dusty	 1.00	Limitations Very dusty	 1.00	No limitation
830:						
Paradiso loam----------	75	Limitations Very dusty Slopes 15 - 25%	 1.00 0.82	Limitations Very dusty	 1.00	Limitations Slopes > 15
831:						
Surnuf gravelly loam----	40	No limitations		No limitations		Limitations Slopes 8 to
Bigridge loam----------	30	No limitations		No limitations		Limitations AWC 2-4" to Slopes 8 to
Spine very gravelly loam----------	15	No limitations		No limitations		Limitations Bedrock dep AWC < 2" to Slopes 8 to
832:						
Surnuf gravelly loam----	40	Limitations Slopes 15 - 25%	 0.82	No limitations		Limitations Slopes > 15
Bigridge loam----------	30	Limitations Slopes 15 - 25%	 0.82	No limitations		Limitations Slopes > 15 AWC 2-4" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
832:						
Spine very gravelly loam	15	Limitations Slopes 15 - 25%	 0.50	No limitations		Limitations Bedrock dep Slopes > 15 AWC < 2" to
833:						
Surnuf gravelly loam	60	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15
Bigridge loam	15	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15 AWC 2-4" to
Spine very gravelly loam	15	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Bedrock dep Slopes > 15 AWC < 2" to
834:						
Hietanen gravelly loam	50	No limitations		No limitations		No limitation
Mac gravelly loam	30	No limitations		No limitations		Limitations Bedrock dep
835:						
Hietanen gravelly loam	60	Limitations Slopes 15 - 25%	 0.50	No limitations		Limitations Slopes > 15
Mac gravelly loam	20	No limitations		No limitations		Limitations Slopes > 15 Bedrock dep
836:						
Hietanen gravelly loam	50	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15
Mac gravelly loam	20	Limitations Slopes > 25%	 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15 Bedrock dep

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
836:						
Spine very gravelly loam	15	Limitations Slopes > 25%	1.00	Limitations Slopes 25 to 40%	0.78	Limitations Bedrock dept Slopes > 15% AWC < 2" to
837:						
Hietanen gravelly loam--	35	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%
Spine very gravelly loam	25	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock dept Slopes > 15% AWC < 2" to
Mac gravelly loam	20	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% Bedrock dept
838:						
Dixmine very gravelly loam	35	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15%
Spine very gravelly loam	25	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Bedrock dept Slopes > 15% AWC < 2" to
Mac gravelly loam	25	Limitations Slopes > 25%	1.00	Limitations Slopes > 40%	1.00	Limitations Slopes > 15% Bedrock dept
839:						
Chawanakee gravelly sandy loam	55	Limitations K factor >.35 and slopes > 8%	1.00	No limitations		Limitations Bedrock dept AWC < 2" to Slopes 8 to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
839:						
Billscabin gravelly sandy loam	35	Limitations Fragments >10" >3%	 1.00	Limitations Surface fragments (>10") >3% coverage	 1.00	Limitations AWC 2-4" to Slopes 8 to
841:						
Billscabin gravelly sandy loam	50	Limitations Slopes > 25% Fragments >10" >3%	 1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	 1.00 1.00	Limitations Slopes > 15 AWC 2-4" to
Bonneyridge sandy loam	35	Limitations Slopes > 25% K factor >.35 and slopes > 8%	 1.00 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15 AWC 2-4" to
842:						
Billscabin gravelly sandy loam	60	Limitations Slopes > 25% Fragments >10" >3%	 1.00 1.00	Limitations Slopes > 40% Surface fragments (>10") >3% coverage	 1.00 1.00	Limitations Slopes > 15 AWC 2-4" to
Bonneyridge sandy loam	25	Limitations Slopes > 25% K factor >.35 and slopes > 8%	 1.00 1.00	Limitations Slopes > 40%	 1.00	Limitations Slopes > 15 AWC 2-4" to
846:						
Bonneyridge sandy loam	60	No limitations		No limitations		Limitations AWC 2-4" to Slopes 8 to
Lewisflat loam	20	Limitations Very dusty	 1.00	Limitations Very dusty	 1.00	Limitations Slopes 8 to
847:						
Bonneyridge sandy loam	60	Limitations K factor >.35 and slopes > 8% Slopes > 25%	 1.00 1.00	No limitations		Limitations Slopes > 15 AWC 2-4" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
847:						
Lewisflat loam----------	20	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			
848:						
Bonneyridge sandy loam--	60	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		K factor >.35 and slopes > 8%	1.00			AWC 2-4" to
Lewisflat loam----------	20	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	
850:						
Lewisflat loam----------	85	Limitations		Limitations		No limitation
		Very dusty	1.00	Very dusty	1.00	
851:						
Lewisflat loam----------	80	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			
852:						
Lewisflat loam----------	75	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	
860:						
Toadtown gravelly loam--	60	Limitations		Limitations		Limitations
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic sur thick
		Very dusty	1.00	Very dusty	1.00	Slopes 8 to
Powellton silt loam-----	20	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes 8 to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
861:						
Toadtown gravelly loam--	60	Limitations		Limitations		Limitations
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Slopes > 15 Organic sur thick
		Very dusty	1.00	Very dusty	1.00	
		Slopes 15 - 25%	0.18			
Powellton silt loam-----	20	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			
862:						
Toadtown gravelly loam--	60	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Organic surface layer >= 4" thick	1.00	Slopes > 15 Organic sur thick
		Organic surface layer >= 4" thick	1.00	Very dusty	1.00	
		Very dusty	1.00	Slopes > 40%	1.00	
Powellton silt loam-----	20	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	
863:						
Toadtown gravelly loam--	60	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Organic surface layer >= 4" thick	1.00	Organic surface layer >= 4" thick	1.00	Organic sur thick
		Very dusty	1.00	Very dusty	1.00	
Powellton silt loam-----	20	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Very dusty	1.00	Very dusty	1.00	
880:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes 8 to
Jocal taxadjunct gravelly loam----------	35	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes 8 to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
881:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.18			
Jocal taxadjunct gravelly loam----------	35	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			
882:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	
Jocal taxadjunct gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	
883:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Very dusty	1.00	Very dusty	1.00	
Jocal taxadjunct gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Very dusty	1.00	Very dusty	1.00	
885:						
Rogerville silt loam----	75	No limitations		No limitations		Limitations
						Slopes 8 to
886:						
Rogerville silt loam----	80	Limitations		No limitations		Limitations
		Slopes 15 - 25%	0.82			Slopes > 15

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
892:						
Rogerville silt loam----	85	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
893:						
Rogerville silt loam----	85	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%
902:						
Lava flows, Lovejoy basalt----------	50	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam----------	40	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Bedrock dept
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	AWC < 2" to
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	Fragments (g >50%
903:						
Mudwash gravelly medial sandy loam----------	45	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	AWC 2-4" to
						Slopes 8 to
Timberisland very gravelly medial sandy loam----------	25	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	AWC < 2" to
		Slopes > 25%	1.00	Slopes 25 to 40%	0.22	Slopes > 15%
Lavatop gravelly medial fine sandy loam--------	20	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	AWC < 2" to
						Bedrock dept
						Slopes 8 to
904:						
Lava flows, Lovejoy basalt----------	60	Not rated		Not rated		Not rated

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
904:						
Lavatop gravelly medial fine sandy loam--------	20	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15%
		Slopes 15 - 25%	0.82			AWC < 2" to
						Bedrock dept
905:						
Lava flows, Lovejoy basalt-----------------	60	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam-------------	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Bedrock dept
		Very dusty	1.00	Slopes > 40%	1.00	Slopes > 15%
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	AWC < 2" to
906:						
Lava flows, Lovejoy basalt-----------------	60	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam-------------	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock dept
		Very dusty	1.00	Very dusty	1.00	Slopes > 15%
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	AWC < 2" to
911:						
Endoaquolls loam--------	75	Limitations		Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 12" depth	1.00	Saturation <
						Occasional f
923:						
Powderhouse medial sandy loam-------------	45	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	AWC 2-4" to
						Bedrock dept
						Slopes 8 to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
923:						
McNair medial coarse sandy loam	25	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	AWC 2-4" to
						Slopes 8 to
Greenwell medial sandy loam	20	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Bedrock dep
						AWC 2-4" to
						Slopes 8 to
924:						
Powderhouse medial sandy loam	45	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			AWC 2-4" to
						Bedrock dep
McNair medial coarse sandy loam	25	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			AWC 2-4" to
Greenwell medial sandy loam	20	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			Bedrock dep
						AWC 2-4" to
925:						
Powderhouse medial sandy loam	45	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	AWC 2-4" to
						Bedrock dep
McNair medial coarse sandy loam	25	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	AWC 2-4" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
925:						
Greenwell medial sandy loam	20	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	Bedrock dep
						AWC 2-4" to
930:						
Shakeridge gravelly medial coarse sandy loam	50	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	AWC < 2" to
						Slopes 8 to
Timberisland very gravelly medial sandy loam	40	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	AWC < 2" to
						Slopes 8 to
931:						
Shakeridge gravelly medial coarse sandy loam	40	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			AWC < 2" to
Mudwash gravelly medial sandy loam	25	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			AWC 2-4" to
Timberisland very gravelly medial sandy loam	15	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			AWC < 2" to
932:						
Shakeridge gravelly medial coarse sandy loam	50	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	AWC < 2" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
932:						
Mudwash gravelly medial sandy loam----------	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	AWC 2-4" to
933:						
Shakeridge gravelly medial coarse sandy loam----------	80	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Very dusty	1.00	Very dusty	1.00	AWC < 2" to
934:						
Mudwash gravelly medial sandy loam----------	80	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	AWC 2-4" to
						Slopes 8 to
939:						
Fluvaquentic Humaquepts very fine sandy loam---	85	Limitations		Limitations		Limitations
		Saturation from 12 to 24" depth	0.86	Saturation from 12 to 24" depth	0.86	Saturation depth
940:						
Dejonah gravelly loam---	50	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes 8 to
Stagpoint loam----------	30	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	AWC 2-4" to
						Slopes 8 to
941:						
Dejonah gravelly loam---	50	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			
Stagpoint loam----------	30	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			AWC 2-4" to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
942:						
Stagpoint loam----------	50	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	AWC 2-4" to
Dejonah gravelly loam---	30	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	
948:						
Stagpoint loam----------	55	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Very dusty	1.00	Very dusty	1.00	AWC 2-4" to
Dejonah gravelly loam---	35	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Very dusty	1.00	Very dusty	1.00	
949:						
Rogerville taxadjunct fine sandy loam--------	80	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Very dusty	1.00	Slopes > 15
		Very dusty	1.00	Slopes > 40%	1.00	AWC 2-4" to
950:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam--------	40	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Bedrock dep
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	AWC < 2" to
						Fragments (>50%
Rock outcrop, olivine basalt, andesite, or mudflow----------	25	Not rated		Not rated		Not rated
Powderhouse medial sandy loam----------	20	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	AWC 2-4" to
						Bedrock dep
						Slopes 8 to

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lan
		Limitations	Value	Limitations	Value	Limi
951:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam--------	40	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Bedrock dep
		Surface fragments <3" >65%	1.00	Surface fragments <3" >65%	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			AWC < 2" to
Rock outcrop, andesite--	25	Not rated		Not rated		Not rated
Powderhouse medial sandy loam------------	20	Limitations		Limitations		Limitations
		Very dusty	1.00	Very dusty	1.00	Slopes > 15
		Slopes 15 - 25%	0.82			AWC 2-4" to
						Bedrock dep
960:						
Surnuf gravelly loam, high elevation---------	85	No limitations		No limitations		No limitation
961:						
Surnuf gravelly loam, high elevation---------	85	No limitations		No limitations		Limitations
						Slopes 8 to
962:						
Surnuf gravelly loam, high elevation---------	85	Limitations		No limitations		Limitations
		Slopes 15 - 25%	0.82			Slopes > 15
963:						
Surnuf gravelly loam, high elevation---------	85	Limitations		Limitations		Limitations
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15
		Fragments >10" .1 to 3%	0.76	Surface fragments (>10") .1-3% coverage	0.76	
990:						
Riverwash, frequently flooded----------	100	Not rated		Not rated		Not rated

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Lawns, lanc
		Limitations	Value	Limitations	Value	Limit
991:						
Xerofluvents sandy loam, frequently flooded	75	Limitations Frequent flooding	0.50	Limitations Frequent flooding	0.50	Limitations Frequent flo
995:						
Pits, gravel	100	Not rated		Not rated		Not rated
996:						
Dumps, excavated material	100	Not rated		Not rated		Not rated
997:						
Pits	95	Not rated		Not rated		Not rated
998:						
Dumps, landfill	100	Not rated		Not rated		Not rated
999:						
Water	100	Not rated		Not rated		Not rated
DAM:						
Dam, manmade	100	Not rated		Not rated		Not rated

The interpretation for paths and trails evaluates the following soil properties at variable depths in the soil: wetness; slope; fragments less than, equal to, or more than 3 inches in size; clay and sand content in the surface la fragments more than or equal to 10 inches in size; Unified classes for a high content of organic matter (PT, OL, and and the hazard of water erosion.

The interpretation for off-road motorcycle trails evaluates the following soil properties at variable depths in ponding; wetness; slope; soil dustiness; fragments less than, equal to, or more than 3 inches in size; sand or clay c layer; and Unified classes for a high content of organic matter (PT, OL, and OH).

The interpretation for lawns, landscaping, and golf fairways evaluates the following soil properties at variable flooding; ponding; wetness; slope; depth to bedrock; depth to a cemented pan; fragments less than, equal to, or more size; Unified classes for a high content of organic matter (PT, OL, and OH); soil dustiness; sand or clay content in surface fragments more than or equal to 10 inches in size; pH; salinity (EC); sodium content (SAR); calcium carbonate content.

Table 16a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite inves
in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The ra
limitation with the highest value. Only the three highest value limitations are listed. There may be more limita
fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the ab
describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
100:						
Anita clay	60	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
Galt clay	25	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
104:						
Bosquejo clay	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation from 2.5' to 6' depth	0.87	Shrink-swell
105:						
Busacca clay loam	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP 3-6)	0.78	Shrink-swell
108:						
Tuscan gravelly loam	45	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Igo gravelly loam	20	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
Anita clay	15	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
109:						
Bosquejo clay loam------	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation from 2.5' to 6' depth	0.87	Shrink-swel
110:						
Bosquejo silt loam, overwash, occasionally flooded----------	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
111yu:						
Auburn loam------------	40	Limitations		Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Bedrock (ha
Sobrante loam----------	40	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Bedrock (soft) from 20 to 40"	0.71	Shrink-swel
		Bedrock (hard) from 20 to 40"	0.01	Slopes 8 to 15%	0.63	Bedrock (ha 40"
114yu:						
Auburn gravelly loam----	40	Limitations		Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Bedrock (ha
Sobrante gravelly loam--	40	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Bedrock (hard) < 40" depth	0.99	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Slopes 8 to 15%	0.63	Shrink-swel
				Shrink-swell (LEP 3-6)	0.50	
118:						
Xerorthents, tailings---	80	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
118co:						
Clear Lake clay, frequently flooded-----	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
				Saturation from 2.5' to 6' depth	0.61	
119:						
Xerorthents, tailings---	70	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
Urban land----------	30	Not rated		Not rated		Not rated
119yu:						
Auburn gravelly loam----	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
Sobrante gravelly loam--	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	0.99	Shrink-swel
				Shrink-swell (LEP 3-6)	0.50	
Rock outcrop----------	20	Not rated		Not rated		Not rated
120:						
Gridley taxadjunct clay loam----------	80	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
121:						
Boga loam----------	45	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Shrink-swell (LEP 3-6)	0.56	Saturation from 2.5' to 6' depth	0.97	Shrink-swel
				Shrink-swell (LEP 3-6)	0.38	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
121:						
Loemstone loam----------	40	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Shrink-swell (LEP 3-6)	0.56	Saturation from 2.5' to 6' depth	0.97	Shrink-swell
				Shrink-swell (LEP 3-6)	0.56	
121su:						
Columbia fine sandy loam, frequently flooded----------	80	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation from 2.5' to 6' depth	0.61	
125:						
Gridley taxadjunct loam	65	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
Calcic Haploxerolls sandy loam----------	20	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation < 2.5' depth	0.99	
126:						
Liveoak sandy loam------	85	No limitations		Limitations		No limitations
				Saturation < 2.5' depth	0.99	
127:						
Gridley taxadjunct loam	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
130:						
Eastbiggs loam----------	80	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
				Pan (thin) from 20-40"	0.71	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
133:						
Eastbiggs loam----------	50	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
				Pan (thin) from 20-40"	0.71	
Galt clay loam----------	40	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
136:						
Duric Xerarents, cut----	35	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Duric Xerarents, fill---	30	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
				Saturation from 2.5' to 6' depth	0.90	
Eastbiggs fine sandy loam, leveled----------	25	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP 3-6)	0.06	Pan (thin) from 20-40"	0.46	Shrink-swel
138su:						
Liveoak sandy clay loam	85	No limitations		Limitations		No limitation
				Saturation < 2.5' depth	0.99	
139su:						
Liveoak taxadjunct loam, frequently flooded----------	45	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation from 2.5' to 6' depth	0.47	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
139su:						
Galt taxadjunct clay loam, frequently flooded	40	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
143su:						
Marcum clay loam	45	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP >6)	1.00	Shrink-swel
Gridley clay loam	40	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
				Bedrock (soft) from 20 to 40"	0.03	
149yu:						
Flanly sandy loam	80	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
				Bedrock (soft) from 20 to 40"	0.15	
150:						
Columbia stratified sand to fine sandy loam	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation from 2.5' to 6' depth	0.87	
150su:						
Olashes sandy loam	85	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
151yu:						
Flanly sandy loam	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
				Bedrock (soft) from 20 to 40"	0.15	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
152:						
Gianella fine sandy loam, frequently flooded	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
153:						
Gianella sandy loam, frequently flooded	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
154:						
Gianella silt loam, frequently flooded	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
158:						
Gianella fine sandy loam, occasionally flooded	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
160:						
Gianella loam, occasionally flooded	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
161:						
Gianella fine sandy loam, rarely flooded	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
162:						
Gianella loam, rarely flooded	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
163yu:						
Holillipah loamy sand	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
165yu:						
Holland loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell
Hoda loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell
Hotaw loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell
				Bedrock (soft) from 20 to 40"	0.15	
173yu:						
Hotaw loam----------	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell
				Bedrock (soft) from 20 to 40"	0.15	
Chawanakee gravelly sandy loam----------	20	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (sof
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Holland loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell
175:						
Farwell clay loam, rarely flooded---------	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.92	Shrink-swell
176:						
Farwell loam, occasionally flooded---	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
176yu:						
Jocal loam----------	80	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
177:						
Farwell silt loam, occasionally flooded---	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP 3-6)	0.68			Shrink-swel
178:						
Arbuckle gravelly loam--	87	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
179:						
Moda taxadjunct loam----	65	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
Arbuckle gravelly loam--	20	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
180:						
Dodgeland silty clay loam, occasionally flooded----------	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
181:						
Dodgeland silty clay loam, frequently flooded----------	80	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
188yu:						
Mariposa taxadjunct gravelly loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.95	Bedrock (hard) < 40" depth	1.00	Bedrock (har 40"
189:						
Esquon silt loam, overwash----------	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
189yu:						
Mariposa taxadjunct gravelly loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.95	Bedrock (hard) < 40" depth	1.00	Bedrock (har 40"
196yu:						
Mildred cobbly loam-----	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
				Bedrock (soft) from 20 to 40"	0.95	
200:						
Parrott silt loam, occasionally flooded---	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation from 2.5' to 6' depth	0.16	
201:						
Parrott silt loam, frequently flooded-----	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation from 2.5' to 6' depth	0.16	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
203:						
Kusalslough silty clay loam, occasionally flooded	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swel
205:						
Parrott silt loam, frequently flooded	50	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation from 2.5' to 6' depth	0.16	
Vermet silt loam, frequently flooded	35	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
206:						
Islandbar sandy loam	60	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (so
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
207:						
Islandbar sandy loam	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%
208:						
Islandbar sandy loam	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
208:						
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (sof
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%
209:						
Islandbar sandy loam	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (sof
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%
210:						
Featherfalls sandy loam	50	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.32	Shrink-swell (LEP 3-6)	0.92	Slopes > 8%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Shrink-swell
Islandbar sandy loam	35	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
211:						
Featherfalls sandy loam	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.32	Shrink-swell (LEP 3-6)	0.92	Shrink-swell
Islandbar sandy loam	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
212:						
Featherfalls sandy loam	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.32	Shrink-swell (LEP 3-6)	0.92	Shrink-swell
Islandbar sandy loam	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
213:						
Featherfalls sandy loam	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.32	Shrink-swell (LEP 3-6)	0.92	Shrink-swell

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
213:						
Islandbar sandy loam----	35	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
214:						
Crystalhill gravelly coarse sandy loam------	35	Limitations Slopes 8 to 15%	 0.16	Limitations Slopes 8 to 15%	 0.16	Limitations Slopes > 8%
Oregongulch gravelly sandy loam-------------	20	Limitations Slopes 8 to 15%	 0.16	Limitations Bedrock (soft) from 20 to 40" Slopes 8 to 15%	 0.90 0.16	Limitations Slopes > 8%
Craigsaddle coarse sandy loam-------------	20	No limitations		No limitations		Limitations Slopes 4 to
Rock outcrop, trondhjemite-----------	10	Not rated		Not rated		Not rated
215:						
Crystalhill gravelly coarse sandy loam------	35	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
Oregongulch gravelly sandy loam-------------	20	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	 1.00 0.90	Limitations Slopes > 8%
Craigsaddle coarse sandy loam-------------	20	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
Rock outcrop, trondhjemite-----------	10	Not rated		Not rated		Not rated

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
216:						
Crystalhill gravelly coarse sandy loam	35	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
Oregongulch gravelly sandy loam	20	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	 1.00 0.90	Limitations Slopes > 8%
Craigsaddle coarse sandy loam	20	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated
217:						
Crystalhill gravelly coarse sandy loam	35	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
Oregongulch gravelly sandy loam	20	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	 1.00 0.90	Limitations Slopes > 8%
Craigsaddle coarse sandy loam	20	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated
218:						
Rock outcrop, quartz diorite	60	Not rated		Not rated		Not rated

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
218:						
Lithic Xerorthents gravelly sandy loam----	20	Limitations		Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock (ha
Chawanakee gravelly sandy loam----------	15	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (so
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
219:						
Rock outcrop, quartz diorite----------	60	Not rated		Not rated		Not rated
Lithic Xerorthents, gravelly sandy loam----	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
Chawanakee gravelly sandy loam----------	15	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%
220:						
Esquon clay, frequently flooded----------	60	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swel
Clear Lake silty clay loam, overwash---------	30	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
221yu:						
Sites loam----------	85	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Slopes 4 to
						Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
222yu:						
Sites loam----------	85	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell
225yu:						
Sites gravelly loam, bedrock substratum-----	80	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Slopes 4 to
						Shrink-swell
226yu:						
Sites gravelly loam, bedrock substratum-----	80	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell
227yu:						
Sites gravelly loam, bedrock substratum-----	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell
242yu:						
Surnuf loam----------	80	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%
243yu:						
Surnuf loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
244yu:						
Surnuf loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
245:						
Surnuf loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
248yu:						
Trainer loam----------	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation from 2.5' to 6' depth	0.61	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
250:						
Llanoseco, occasionally flooded	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
252:						
Whitecabin silty clay, occasionally flooded	60	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swel
Ordferry silty clay, occasionally flooded	25	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
252yu:						
Woodleaf gravelly loam	80	Limitations		Limitations		Limitations
		Bedrock (hard) from 20 to 40"	0.64	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
				Shrink-swell (LEP 3-6)	0.50	Bedrock (ha
		Shrink-swell (LEP 3-6)	0.50	Slopes 8 to 15%	0.04	40"
		Slopes 8 to 15%	0.04			Shrink-swel
253yu:						
Woodleaf gravelly loam	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.64	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
				Shrink-swell (LEP 3-6)	0.50	40"
		Shrink-swell (LEP 3-6)	0.50			Shrink-swel
255:						
Whitecabin silty clay loam, occasionally flooded	60	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
255:						
Ordferry silty clay, occasionally flooded---	30	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
256:						
Whitecabin silt loam, occasionally flooded---	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swell
257:						
Llanoseco, frequently flooded----------	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
258:						
Codora, occasionally flooded----------	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation from 2.5' to 6' depth	0.92	Shrink-swell
260:						
Ordferry silty clay, occasionally flooded---	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
280:						
Columbia taxadjunct stratified very fine sandy loam----------	80	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
290:						
Perkins gravelly loam---	90	No limitations		Limitations		No limitation
				Saturation from 2.5' to 6' depth	0.05	
300:						
Redsluff gravelly loam--	80	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP 3-6)	0.01	Saturation from 2.5' to 6' depth	0.97	Shrink-swel
301:						
Wafap gravelly loam-----	70	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Hamslough clay----------	15	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
302:						
Redtough loam----------	50	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP 3-6)	0.01			Shrink-swel
Redswale cobbly loam----	35	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Fragments (>3") 25 to 50%	0.50	Fragments (>3") 25 to 50%	0.50	Fragments (
303:						
Munjar gravelly loam----	60	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swel
		Saturation from 18 to 30" depth	0.88	Shrink-swell (LEP >6)	1.00	Saturation depth
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (
Tuscan taxadjunct gravelly clay loam-----	20	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
303:						
Galt clay----------	10	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
304:						
Redtough loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.01			Shrink-swell
305:						
Redtough gravelly loam--	45	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
Redswale loam----------	25	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
Anita, gravelly duripan	20	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Pan (thin) < 20" depth	1.00	Ponding (any
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swell
306:						
Duric Xerarents, fill---	50	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
Duric Xerarents, cut----	40	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
307:						
Duric Xerarents clay loam, leveled----------	70	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
310:						
Kimball loam----------	85	No limitations		No limitations		No limitations

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
317:						
Thompsonflat loam-------	75	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.32	Slopes 4 to
				Saturation from 2.5' to 6' depth	0.16	Shrink-swel
318:						
Thompsonflat fine sandy loam--------------------	50	No limitations		Limitations		Limitations
				Saturation from 2.5' to 6' depth	0.16	Slopes 4 to
Oroville gravelly fine sandy loam-------------	40	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
320:						
Vistarobles sandy loam--	50	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Pan (thin) < 20" depth	1.00	Ponding (an
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swel
Redding loam------------	40	Limitations		Limitations		Limitations
		Saturation from 18 to 30" depth	0.39	Saturation < 2.5' depth	1.00	Saturation depth
321:						
Durixeralfs, fine-loamy, gravelly fine sandy loam--------------------	50	Limitations		Limitations		Limitations
		Saturation from 18 to 30" depth	0.88	Saturation < 2.5' depth	1.00	Saturation
				Pan (thin) from 20-40"	0.71	depth
Durixeralfs, loamy-skeletal, gravelly fine sandy loam------------	20	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Pan (thin) < 20" depth	1.00	Ponding (an
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation
		Thin pan <= 20"	1.00	Saturation < 2.5' depth	1.00	Thin pan <=

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
321:						
Typic Petraquepts silty clay	15	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Pan (thin) < 20" depth	1.00	Ponding (any
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swell
330:						
Wilsoncreek loam, occasionally flooded	60	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation from 2.5' to 6' depth	0.53	
Trainer loam, occasionally flooded	25	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation from 2.5' to 6' depth	0.95	
331:						
Thompsonflat loam	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.32	Shrink-swell
				Saturation from 2.5' to 6' depth	0.16	
335:						
Galt clay loam	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
336:						
Galt clay	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
337:						
Galt clay loam	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
338:						
Oxyaquic Xerofluvents						
silt loam	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation from 2.5' to 6' depth	0.87	
339:						
Oxyaquic Xerofluvents						
sandy loam, frequently flooded	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation from 2.5' to 6' depth	0.87	
340:						
Rock outcrop, Lovejoy basalt	35	Not rated		Not rated		Not rated
Thermalrocks very gravelly loam	25	Limitations		Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Slopes 4 to
						Fragments (
Campbellhills gravelly loam	20	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP 3-6)	0.82	Shrink-swell (LEP 3-6)	0.82	Shrink-swel
				Bedrock (hard) from 40 to 60"	0.42	Slopes 4 to
341:						
Elsey loam	25	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Fragments (>3") 25 to 50%	0.10	Bedrock (hard) < 40" depth	1.00	Fragments (
		Bedrock (hard) from 20 to 40"	0.01	Fragments (>3") 25 to 50%	0.10	Bedrock (ha
						40"

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
341:						
Beatsonhollow gravelly loam	25	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
Campbellhills gravelly loam	20	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP 3-6)	0.82	Shrink-swell (LEP 3-6)	0.82	Shrink-swell
				Bedrock (hard) from 40 to 60"	0.42	
Rock outcrop, Lovejoy basalt	20	Not rated		Not rated		Not rated
342:						
Thermalrocks very gravelly loam	40	Limitations		Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Slopes > 15%	1.00	Slopes > 15%	1.00	Bedrock (har
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>
Beatsonhollow taxadjunct fine sandy loam	35	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
Rock outcrop, Lovejoy basalt	15	Not rated		Not rated		Not rated
343:						
Coalcanyon very cobbly loam	50	Limitations		Limitations		Limitations
		Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99	Slopes > 8%
		Slopes 8 to 15%	0.16	Shrink-swell (LEP 3-6)	0.18	Fragments (>
				Slopes 8 to 15%	0.16	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
343:						
Coonhollow gravelly loam	35	Limitations		Limitations		Limitations
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Slopes > 8%
		Slopes 8 to 15%	0.16	Shrink-swell (LEP 3-6)	0.18	Fragments (
				Slopes 8 to 15%	0.16	
344:						
Coalcanyon very cobbly loam	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99	Fragments (
				Shrink-swell (LEP 3-6)	0.18	
Coonhollow gravelly loam	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (
				Shrink-swell (LEP 3-6)	0.18	
Rock outcrop, Lovejoy basalt	15	Not rated		Not rated		Not rated
346:						
Cherotable loam	50	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
				Bedrock (hard) from 40 to 60"	0.84	Slopes 4 to
				Saturation from 2.5' to 6' depth	0.83	
Elsey loam	35	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Fragments (>3") 25 to 50%	0.10	Bedrock (hard) < 40" depth	1.00	Slopes 4 to
		Bedrock (hard) from 20 to 40"	0.01	Fragments (>3") 25 to 50%	0.10	Fragments (
347:						
Haplic Palexeralfs loam	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP 3-6)	0.32	Shrink-swell (LEP >6)	0.99	Shrink-swel
						Slopes 4 to

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
353:						
Cherokeespring gravelly silt loam	80	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.68	Shrink-swell (LEP >6)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Shrink-swell
355:						
Coalcanyon very cobbly loam	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99	Fragments (>
				Shrink-swell (LEP 3-6)	0.18	
Talus	35	Not rated		Not rated		Not rated
356:						
Coalcanyon very cobbly loam	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99	Fragments (>
				Shrink-swell (LEP 3-6)	0.18	
Rock outcrop, basalt cliffs	20	Not rated		Not rated		Not rated
Talus	20	Not rated		Not rated		Not rated
Coonhollow gravelly loam	10	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>
				Shrink-swell (LEP 3-6)	0.18	
360:						
Typic Xerofluvents, coarse-loamy	45	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation from 2.5' to 6' depth	0.87	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
360:						
Typic Xerofluvents, sandy-skeletal---	40	Limitations Flooding >= rare	 1.00	Limitations Flooding >= rare Saturation from 2.5' to 6' depth	 1.00 0.87	Limitations Flooding >=
361:						
Typic Xerofluvents, sandy-skeletal---	85	Limitations Flooding >= rare	 1.00	Limitations Flooding >= rare Saturation from 2.5' to 6' depth	 1.00 0.87	Limitations Flooding >=
362:						
Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	Limitations Shrink-swell (LEP 3-6)	 0.22	No limitations		Limitations Shrink-swel
Ultic Haploxeralfs, sandstone, low elevation, deep---	25	No limitations		No limitations		No limitation
363:						
Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	Limitations Shrink-swell (LEP 3-6)	 0.22	No limitations		Limitations Slopes 4 to Shrink-swel
Ultic Haploxeralfs, sandstone, low elevation, deep---	30	Limitations Slopes 8 to 15%	 0.63	Limitations Slopes 8 to 15%	 0.63	Limitations Slopes > 8%
364:						
Ultic Haploxeralfs, sandstone, low elevation, deep---	50	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
364:						
Ultic Haploxeralfs, sandstone, low elevation, very deep---	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.22			Shrink-swell
365:						
Palexerults gravelly loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
366:						
Palexerults gravelly loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
370:						
Palexerults gravelly loam----------	80	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
						Slopes 4 to
375:						
Wickscorner loam--------	80	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
				Saturation from 2.5' to 6' depth	0.16	Slopes 4 to
376:						
Flagcanyon gravelly loam----------	50	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.32	Saturation < 2.5' depth	1.00	Shrink-swell
		Saturation from 18 to 30" depth	0.28	Pan (thin) from 20-40"	0.46	Saturation f depth
				Shrink-swell (LEP 3-6)	0.32	Slopes 4 to
Wickscorner loam--------	35	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
				Saturation from 2.5' to 6' depth	0.16	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
377:						
Flagcanyon taxadjunct fine sandy loam--------	55	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Durixeralfs, clayey-skeletal, loam---------	20	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Duraquerts gravelly clay--------------------	15	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
400:						
Subaco taxadjunct clay--	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swel
415:						
Ignord fine sandy loam--	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
416:						
Calcic Haploxerolls sandy loam-------------	90	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation < 2.5' depth	0.99	
418:						
Almendra loam-----------	85	Limitations		No limitations		Limitations
		Shrink-swell (LEP 3-6)	0.01			Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
419:						
Conejo fine sandy loam, overwash	85	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78	Shrink-swell
420:						
Conejo clay loam	85	Limitations		No limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50			Shrink-swell
425:						
Vina fine sandy loam	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
426:						
Vina loam	85	No limitations		No limitations		No limitations
439:						
Oxyaquic Xerofluvents clay	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swell
440:						
Oxyaquic Xerofluvents silt loam, frequently flooded	80	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation < 2.5' depth	0.99	
441:						
Oxyaquic Xerofluvents very fine sandy loam	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation < 2.5' depth	0.99	
442:						
Durixerolls clay loam	55	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
442:						
Haploxerolls clay loam--	30	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP 3-6)	0.01	Saturation < 2.5' depth	0.99	Shrink-swel
443:						
Durixerolls loam--------	60	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
Haploxerolls loam-------	25	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation < 2.5' depth	0.99	
445:						
Chico loam--------------	85	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.18	Shrink-swell (LEP 3-6)	0.01	Shrink-swel
447:						
Charger fine sandy loam	80	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation from 2.5' to 6' depth	0.87	
448:						
Haploxerolls clay loam--	75	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP 3-6)	0.82	Saturation from 2.5' to 6' depth	0.16	Shrink-swel
449:						
Haploxerolls loam-------	75	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
				Saturation from 2.5' to 6' depth	0.16	
500:						
Lofgren clay------------	45	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
500:						
Blavo clay	40	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swell
501:						
Lofgren clay, occasionally flooded	45	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swell
Blavo clay, occasionally flooded	40	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swell
502:						
Blavo silt loam, overwash, occasionally flooded	80	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swell
519:						
Edjobe silty clay	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
				Saturation < 2.5' depth	0.99	
520:						
Esquon clay	60	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Neerdobe clay	30	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swell

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
521:						
Neerdobe silt loam, overwash	85	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
522:						
Clear Lake silty clay loam, overwash	80	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
523:						
Esquon silty clay loam, overwash	80	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
525:						
Govstanford loam	85	Limitations		Limitations		Limitations
		Saturation from 18 to 30" depth	0.24	Saturation < 2.5' depth	1.00	Saturation f depth
526:						
Govstanford loam, occasionally flooded	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation from 18 to 30" depth	0.24	Saturation < 2.5' depth	1.00	Saturation f depth
528:						
Neerdobe clay loam	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
550:						
Dunstone loam, dry	60	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (sof
						Slopes 4 to

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
550:						
Loafercreek silt loam, dry	20	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Bedrock (soft) from 20 to 40"	0.54	Slopes > 8%
				Slopes 8 to 15%	0.01	
551:						
Dunstone loam, dry	35	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%
Lomarica loam	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
				Bedrock (soft) from 20 to 40"	0.29	
Argonaut taxadjunct loam	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
				Bedrock (soft) from 20 to 40"	0.46	
552:						
Dunstone gravelly loam	45	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (so
		Bedrock (hard) from 20 to 40"	0.03	Bedrock (soft) < 20" depth	1.00	Slopes > 8%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Bedrock (ha 40"
Loafercreek gravelly loam	40	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Bedrock (hard) from 40 to 60"	0.96	Slopes > 8%
				Bedrock (soft) from 20 to 40"	0.35	
				Slopes 8 to 15%	0.01	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
553:						
Dunstone gravelly loam--	45	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.03	Bedrock (soft) < 20" depth	1.00	Bedrock (ha 40"
Loafercreek gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
				Bedrock (hard) from 40 to 60"	0.96	
				Bedrock (soft) from 20 to 40"	0.35	
554:						
Dunstone gravelly loam--	45	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.03	Bedrock (soft) < 20" depth	1.00	Bedrock (ha 40"
Loafercreek gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
				Bedrock (hard) from 40 to 60"	0.96	
				Bedrock (soft) from 20 to 40"	0.35	
555:						
Dunstone gravelly loam--	45	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.03	Bedrock (soft) < 20" depth	1.00	Bedrock (ha 40"
Loafercreek gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
				Bedrock (hard) from 40 to 60"	0.96	
				Bedrock (soft) from 20 to 40"	0.35	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
556:						
Mounthope loam----------	50	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Slopes > 8%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Shrink-swell
Hartsmill gravelly loam	40	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP >6)	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Shrink-swell
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Fragments (>
557:						
Mounthope loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Shrink-swell
Hartsmill gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Fragments (>
558:						
Hartsmill gravelly loam	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Fragments (>
Mounthope loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Shrink-swell
559:						
Hartsmill gravelly loam	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Fragments (>
Mounthope loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Shrink-swell

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
560:						
Hartsmill gravelly loam	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP >6)	1.00	Shrink-swel
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Fragments (
Mounthope loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Shrink-swel
561:						
Bigridge loam----------	50	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
Minniecreek loam--------	35	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Slopes > 8%
		Slopes 8 to 15%	0.01	Bedrock (soft) from 20 to 40"	0.29	Shrink-swel
				Slopes 8 to 15%	0.01	
562:						
Bigridge loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Minniecreek loam--------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
				Bedrock (soft) from 20 to 40"	0.29	
563:						
Bigridge loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Minniecreek loam--------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
				Bedrock (soft) from 20 to 40"	0.29	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
564:						
Bigridge loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Minniecreek loam--------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell
				Bedrock (soft) from 20 to 40"	0.29	
565:						
Dunstone loam, dry------	35	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft
						Slopes 4 to
Argonaut taxadjunct loam-------------------	30	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Slopes 8 to 15%	0.01	Bedrock (soft) from 20 to 40"	0.46	Slopes > 8%
				Slopes 8 to 15%	0.01	
Sunnyslope loam---------	20	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft
						Slopes 4 to
566:						
Dunstone loam, dry------	45	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft
						Slopes 4 to
Loafercreek silt loam, dry---------------------	20	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Bedrock (soft) from 20 to 40"	0.54	Slopes > 8%
				Slopes 8 to 15%	0.01	
Katskillhill loam-------	15	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Slopes 8 to 15%	0.01	Bedrock (hard) from 40 to 60"	0.96	Slopes > 8%
				Slopes 8 to 15%	0.01	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
567:						
Dunstone loam, dry------	40	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (so
						Slopes 4 to
Loafercreek silt loam, dry----------	25	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Bedrock (soft) from 20 to 40"	0.54	Slopes > 8%
				Slopes 8 to 15%	0.01	
Argonaut taxadjunct loam----------	20	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
		Slopes 8 to 15%	0.01	Bedrock (soft) from 20 to 40"	0.46	Slopes > 8%
				Slopes 8 to 15%	0.01	
577:						
Parkshill coarse sandy loam----------	40	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
Flanly loam----------	25	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Bedrock (soft) from 20 to 40"	0.95	Slopes > 8%
				Slopes 8 to 15%	0.01	
Hurleton gravelly sandy loam----------	20	Limitations		Limitations		Limitations
		Bedrock (hard) from 20 to 40"	0.84	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Slopes 8 to 15%	0.04	Slopes 8 to 15%	0.04	Bedrock (ha
						40"
578:						
Flanly loam----------	45	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Bedrock (soft) from 20 to 40"	0.95	Slopes > 8%
				Slopes 8 to 15%	0.01	
Swedesflat cobbly fine sandy loam----------	35	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (so
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
580:						
Surnuf taxadjunct loam--	40	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
Griffgulch very gravelly silt loam-----	25	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Fragments (>3") 25 to 50%	0.94	Fragments (>3") 25 to 50%	0.94	Slopes > 8%
		Slopes 8 to 15%	0.01	Bedrock (hard) from 40 to 60"	0.01	Fragments (>
Rock outcrop, metavolcanic----------	20	Not rated		Not rated		Not rated
581:						
Surnuf taxadjunct loam--	65	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Griffgulch very gravelly silt loam-----	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Fragments (>3") 25 to 50%	0.94	Fragments (>3") 25 to 50%	0.94	Fragments (>
582:						
Surnuf taxadjunct loam--	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Griffgulch very gravelly silt loam-----	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Fragments (>3") 25 to 50%	0.94	Fragments (>3") 25 to 50%	0.94	Fragments (>
583:						
Surnuf taxadjunct loam--	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
583:						
Griffgulch very gravelly silt loam-----	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Fragments (>3") 25 to 50%	0.94	Fragments (>3") 25 to 50%	0.94	Fragments (>
584:						
Flanly loam-------------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
				Bedrock (soft) from 20 to 40"	0.95	
Swedesflat cobbly fine sandy loam-------------	30	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%
Rackerby very gravelly sandy loam-------------	25	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%
585:						
Flanly loam-------------	45	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Bedrock (soft) from 20 to 40"	0.95	Slopes > 8%
				Slopes 8 to 15%	0.01	
Sommeyflat loam---------	35	No limitations		No limitations		Limitations
						Slopes 4 to
586:						
Sommeyflat loam---------	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Mounthope loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Shrink-swell

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
587:						
Sommeyflat loam---------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Mounthope loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Shrink-swell
Hurleton gravelly sandy loam-------------------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.84	Bedrock (hard) < 40" depth	1.00	Bedrock (har 40"
588:						
Ultic Haploxeralfs, thermic, high terrace--	95	Limitations		Limitations		Limitations
		Saturation from 18 to 30" depth	0.88	Saturation < 2.5' depth	1.00	Saturation f depth
						Slopes 4 to
589:						
Ultic Haploxeralfs, thermic, high terrace--	95	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Saturation from 18 to 30" depth	0.88	Saturation < 2.5' depth	1.00	Saturation f depth
590:						
Vistarobles sandy loam--	30	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Redding loam------------	25	Limitations		Limitations		Limitations
		Saturation from 18 to 30" depth	0.39	Saturation < 2.5' depth	1.00	Saturation f depth
Argonaut taxadjunct loam-------------------	20	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
				Bedrock (soft) from 20 to 40"	0.46	Slopes 4 to

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
590:						
Haploxererts gravelly silty clay	15	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
603:						
Oroville gravelly fine sandy loam	30	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Thermalito sandy loam	25	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Shrink-swel
Fernandez sandy loam	15	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
				Saturation from 2.5' to 6' depth	0.87	
Thompsonflat fine sandy loam	15	No limitations		Limitations		Limitations
				Saturation from 2.5' to 6' depth	0.16	Slopes 4 to
605:						
Duric Xerarents fine sandy loam, leveled	75	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Pan (thin) < 20" depth	1.00	Ponding (an
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation
		Thin pan <= 20"	1.00	Saturation < 2.5' depth	1.00	Thin pan <=
Oroville gravelly fine sandy loam	20	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
606:						
Redtough loam----------	45	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP 3-6)	0.01			Shrink-swell
Fallager loam----------	30	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Anita, gravelly duripan	15	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Pan (thin) < 20" depth	1.00	Ponding (any
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swell
609:						
Anita, gravelly duripan	50	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Pan (thin) < 20" depth	1.00	Ponding (any
		Saturation < 18" depth	1.00	Ponding (any duration)	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' depth	1.00	Shrink-swell
Tuscan taxadjunct gravelly clay loam-----	40	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
614:						
Doemill gravelly loam---	50	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
Jokerst very cobbly loam	40	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
615:						
Doemill gravelly loam---	50	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
615:						
Jokerst very cobbly loam	40	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
616:						
Jokerst very cobbly loam	35	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Saturation
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Bedrock (ha
Doemill gravelly loam---	35	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Saturation
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Bedrock (ha
Typic Haploxeralfs gravelly loam----------	15	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.84	Slopes 8 to 15%	0.84	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78	Shrink-swel
617:						
Doemill gravelly loam---	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
Jokerst very cobbly loam	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
Typic Haploxeralfs gravelly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78	Shrink-swel
619:						
Carhart taxadjunct clay	90	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
620:						
Doemill gravelly loam---	40	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
						Slopes 4 to
Jokerst very cobbly loam	25	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations		Limitations		Limitations
		Fragments (>3") >50%	1.00	Saturation < 2.5' depth	1.00	Fragments (>
		Shrink-swell (LEP 3-6)	0.78	Bedrock (hard) < 40" depth	1.00	Shrink-swell
		Bedrock (hard) from 20 to 40"	0.35	Fragments (>3") >50%	1.00	Bedrock (har 40"
621:						
Doemill gravelly loam---	30	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Saturation <
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Bedrock (har
Jokerst very cobbly loam	30	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Saturation <
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Bedrock (har
Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations		Limitations		Limitations
		Fragments (>3") >50%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78	Fragments (>3") >50%	1.00	Fragments (>
		Slopes 8 to 15%	0.37	Saturation < 2.5' depth	0.99	Shrink-swell
622:						
Xerorthents, shallow----	40	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (soi
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (har

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
622:						
Typic Haploxeralfs gravelly loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78	Bedrock (hard) < 40" depth	0.99	Shrink-swel
				Shrink-swell (LEP 3-6)	0.78	
Rock outcrop, mudflow-breccia cliffs---------	15	Not rated		Not rated		Not rated
623:						
Xerorthents, shallow----	40	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (ha
Typic Haploxeralfs gravelly loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78	Bedrock (hard) < 40" depth	0.99	Shrink-swel
				Shrink-swell (LEP 3-6)	0.78	
Rock outcrop, mudflow-breccia cliffs---------	20	Not rated		Not rated		Not rated
624:						
Ultic Haploxeralfs, mesic, gravelly loam---	60	Limitations		Limitations		Limitations
		Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99	Fragments (
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) from 40 to 60"	0.96	Shrink-swel
						Slopes 4 to
				Shrink-swell (LEP 3-6)	0.50	
Rockstripe very gravelly loam----------	25	Limitations		Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Slopes 4 to
		Shrink-swell (LEP 3-6)	0.01			Fragments (

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
625:						
Ultic Haploxeralfs, mesic, gravelly loam---	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") >50%	0.99	Fragments (>3") >50%	0.99	Fragments (>
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) from 40 to 60"	0.96	Shrink-swell
Rockstripe very gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>
626:						
Ultic Haploxeralfs gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
				Bedrock (hard) from 40 to 60"	0.61	
Rockstripe very gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>
Rock outcrop, mudflow-breccia cliffs---------	15	Not rated		Not rated		Not rated
627:						
Ultic Haploxeralfs gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
				Bedrock (hard) from 40 to 60"	0.61	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
627:						
Rockstripe very gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (
Rock outcrop, mudflow-breccia cliffs---------	15	Not rated		Not rated		Not rated
628:						
Rockstripe very gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (
Ultic Haploxeralfs gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swel
				Bedrock (hard) from 40 to 60"	0.61	
Rock outcrop, mudflow-breccia cliffs---------	20	Not rated		Not rated		Not rated
629:						
Slideland gravelly loam	80	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.37	Slopes 8 to 15%	0.37	Shrink-swel
630:						
Slideland gravelly loam	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swel
631:						
Slideland gravelly loam	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
632:						
Ultic Haploxeralfs, conglomerate, very deep	50	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Slopes 8 to 15%	0.84	Slopes > 8%
		Slopes 8 to 15%	0.84	Shrink-swell (LEP 3-6)	0.50	Shrink-swell
Ultic Haploxeralfs, conglomerate, moderately deep--------	40	Limitations		Limitations		Limitations
		Fragments (>3") 25 to 50%	0.32	Bedrock (soft) from 20 to 40"	0.84	Slopes 4 to
		Shrink-swell (LEP 3-6)	0.22			Fragments (>
				Fragments (>3") 25 to 50%	0.32	Shrink-swell
				Shrink-swell (LEP 3-6)	0.22	
633:						
Ultic Haploxeralfs, conglomerate, very deep	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.50	Shrink-swell
Ultic Haploxeralfs, conglomerate, moderately deep--------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.32	Bedrock (soft) from 20 to 40"	0.84	Fragments (>
		Shrink-swell (LEP 3-6)	0.22			Shrink-swell
				Fragments (>3") 25 to 50%	0.32	
634:						
Ultic Haploxeralfs, conglomerate, very deep	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.50	Shrink-swell
Ultic Haploxeralfs, conglomerate, moderately deep--------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.32	Bedrock (soft) from 20 to 40"	0.84	Fragments (>
		Shrink-swell (LEP 3-6)	0.22			Shrink-swell
				Fragments (>3") 25 to 50%	0.32	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
635:						
Ultic Haploxeralfs, conglomerate, very deep	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
Ultic Haploxeralfs, conglomerate, moderately deep--------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.32	Bedrock (soft) from 20 to 40"	0.84	Fragments (
		Shrink-swell (LEP 3-6)	0.22			Shrink-swel
				Fragments (>3") 25 to 50%	0.32	
636:						
Ultic Haploxeralfs, conglomerate, moderately deep--------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.32	Bedrock (soft) from 20 to 40"	0.84	Fragments (
		Shrink-swell (LEP 3-6)	0.22			Shrink-swel
				Fragments (>3") 25 to 50%	0.32	
Ultic Haploxeralfs, conglomerate, very deep	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
637:						
Ultic Haploxeralfs, sandstone----------	80	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
638:						
Ultic Haploxeralfs, sandstone----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
639:						
Ultic Haploxeralfs, sandstone----------	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
640:						
Ultic Haploxeralfs,						
sandstone----------	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
641:						
Ultic Haploxeralfs,						
sandstone----------	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
642:						
Chinacamp gravelly loam	70	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swel
						Slopes 4 to
643:						
Chinacamp gravelly loam	70	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swel
644:						
Chinacamp gravelly loam	70	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swel
645:						
Chinacamp gravelly loam	70	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swel
646:						
Coalcanyon taxadjunct						
very gravelly loam-----	80	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78	Shrink-swel
		Fragments (>3") 25 to 50%	0.30	Fragments (>3") 25 to 50%	0.30	Fragments (
						Slopes 4 to
647:						
Coalcanyon taxadjunct						
very gravelly loam-----	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78	Shrink-swel
		Fragments (>3") 25 to 50%	0.30	Fragments (>3") 25 to 50%	0.30	Fragments (

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
648:						
Coalcanyon taxadjunct very gravelly loam-----	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78	Shrink-swell
		Fragments (>3") 25 to 50%	0.30	Fragments (>3") 25 to 50%	0.30	Fragments (>
649:						
Coalcanyon taxadjunct very gravelly loam-----	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78	Shrink-swell
		Fragments (>3") 25 to 50%	0.30	Fragments (>3") 25 to 50%	0.30	Fragments (>
650:						
Schott very gravelly loam-------------------	65	Limitations		Limitations		Limitations
		Fragments (>3") 25 to 50%	0.97	Fragments (>3") 25 to 50%	0.97	Fragments (>
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78	Shrink-swell
				Bedrock (hard) from 40 to 60"	0.42	Slopes 4 to
651:						
Schott very gravelly loam-------------------	65	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.97	Fragments (>3") 25 to 50%	0.97	Fragments (>
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78	Shrink-swell
652:						
Schott very gravelly loam-------------------	65	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.97	Fragments (>3") 25 to 50%	0.97	Fragments (>
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78	Shrink-swell
Rock outcrop, mudflow breccia----------------	20	Not rated		Not rated		Not rated

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
654:						
Coridge bouldery loam---	70	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Saturation < 2.5' depth	1.00	Shrink-swell
		Saturation from 18 to 30" depth	0.90	Bedrock (hard) < 40" depth	1.00	Saturation f depth
		Bedrock (hard) from 20 to 40"	0.90	Shrink-swell (LEP >6)	1.00	Bedrock (har 40"
Rock outcrop, Cohasset basalt----------	20	Not rated		Not rated		Not rated
655:						
Coridge bouldery loam---	70	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Saturation < 2.5' depth	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.90	Bedrock (hard) < 40" depth	1.00	Shrink-swell
		Saturation from 18 to 30" depth	0.44	Shrink-swell (LEP >6)	1.00	Bedrock (har 40"
Rock outcrop, Cohasset basalt----------	20	Not rated		Not rated		Not rated
656:						
Rock outcrop, basalt cliffs----------	40	Not rated		Not rated		Not rated
Coalcanyon taxadjunct very gravelly loam-----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.78	Shrink-swell
		Fragments (>3") 25 to 50%	0.30	Fragments (>3") 25 to 50%	0.30	Fragments (>
657:						
Bonneyridge sandy loam--	35	No limitations		No limitations		Limitations
						Slopes 4 to
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (sof
						Slopes 4 to
Rock outcrop, quartz diorite----------	20	Not rated		Not rated		Not rated

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
658:						
Bonneyridge sandy loam--	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%
Rock outcrop, quartz diorite----------	25	Not rated		Not rated		Not rated
659:						
Bonneyridge sandy loam--	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%
Rock outcrop, quartz diorite----------	25	Not rated		Not rated		Not rated
660:						
Bonneyridge sandy loam--	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%
Rock outcrop, quartz diorite----------	30	Not rated		Not rated		Not rated
661:						
Millerridge gravelly sandy clay loam--------	45	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swel
				Bedrock (soft) from 20 to 40"	0.77	Slopes 4 to

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
661:						
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (sof
		Shrink-swell (LEP >6)	0.99	Bedrock (soft) < 20" depth	1.00	Shrink-swell
		Bedrock (hard) from 20 to 40"	0.46	Shrink-swell (LEP >6)	0.99	Bedrock (har 40"
662:						
Millerridge gravelly sandy clay loam	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
				Bedrock (soft) from 20 to 40"	0.77	
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (sof
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Bedrock (soft) < 20" depth	1.00	Shrink-swell
663:						
Millerridge gravelly sandy clay loam	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
				Bedrock (soft) from 20 to 40"	0.77	
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (sof
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Bedrock (soft) < 20" depth	1.00	Shrink-swell
664:						
Millerridge gravelly sandy clay loam	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
				Bedrock (soft) from 20 to 40"	0.77	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
664:						
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Bedrock (soft) < 20" depth	1.00	Shrink-swel
665:						
Surnuf gravelly loam	40	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
Bigridge loam	40	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
666:						
Surnuf gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Bigridge loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
667:						
Surnuf gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Bigridge loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
668:						
Surnuf gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Bigridge loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
669:						
Oroshore gravelly loam--	35	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Fragments (>3") 25 to 50%	0.03	Bedrock (soft) from 20 to 40"	0.15	Slopes > 8%
		Slopes 8 to 15%	0.01	Fragments (>3") 25 to 50%	0.03	Fragments (>
Mounthope loam----------	25	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Slopes > 8%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Shrink-swell
Dunstone gravelly loam--	20	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (soi
		Bedrock (hard) from 20 to 40"	0.03	Bedrock (soft) < 20" depth	1.00	Slopes > 8%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Bedrock (har 40"
670:						
Oroshore gravelly loam--	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Fragments (>3") 25 to 50%	0.03	Bedrock (soft) from 20 to 40"	0.15	Fragments (>
Mounthope loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Shrink-swell
Dunstone gravelly loam--	20	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (soi
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.03	Bedrock (soft) < 20" depth	1.00	Bedrock (har 40"
671:						
Oroshore gravelly loam--	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Fragments (>3") 25 to 50%	0.03	Bedrock (soft) from 20 to 40"	0.15	Fragments (>

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
671:						
Mounthope loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Shrink-swel
Dunstone gravelly loam--	20	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.03	Bedrock (soft) < 20" depth	1.00	Bedrock (ha 40"
672:						
Oroshore gravelly loam--	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swel
		Fragments (>3") 25 to 50%	0.03	Bedrock (soft) from 20 to 40"	0.15	Fragments (
Mounthope loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.06	Shrink-swell (LEP 3-6)	0.06	Shrink-swel
Dunstone gravelly loam--	25	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.03	Bedrock (soft) < 20" depth	1.00	Bedrock (ha 40"
674:						
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%
Bonneyridge sandy loam--	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Rock outcrop, quartz diorite----------	30	Not rated		Not rated		Not rated

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
675:						
Clearhayes sandy clay loam	70	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation from 18 to 30" depth	0.95	Saturation < 2.5' depth	1.00	Saturation f depth
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>
Hamslough clay	15	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
676:						
Carhart clay	50	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Anita taxadjunct clay	40	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Ponding (any duration)	1.00	Bedrock (sof
		Ponding (any duration)	1.00	Saturation < 2.5' depth	1.00	Ponding (any
		Saturation < 18" depth	1.00	Shrink-swell (LEP >6)	1.00	Saturation <
677:						
Tuscan gravelly loam	40	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Pan (thick) < 20" depth	1.00	Pan (thick) < 40" depth	1.00	Pan (thick)
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Fallager loam	25	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Anita, gravelly duripan	15	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
679:						
Lucksev loam----------	40	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Saturation < 2.5' depth	1.00	Bedrock (so
		Saturation < 18" depth	1.00	Bedrock (soft) < 20" depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Butteside gravelly loam	35	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
				Bedrock (soft) from 20 to 40"	0.71	Slopes 4 to
Carhart clay----------	15	Limitations		Limitations		Limitations
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
				Bedrock (soft) from 20 to 40"	0.46	Slopes 4 to
680:						
Lucksev loam----------	45	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (so
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Butteside gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
				Bedrock (soft) from 20 to 40"	0.71	
683:						
Typic Haploxeralfs, magnesic, low elevation	50	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Bedrock (hard) < 40" depth	1.00	Shrink-swel
		Bedrock (hard) from 20 to 40"	0.46	Shrink-swell (LEP >6)	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Bedrock (ha 40"
Earlal very gravelly loam----------	20	Limitations		Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Bedrock (ha
		Fragments (>3") 25 to 50%	0.44	Fragments (>3") 25 to 50%	0.44	Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
683:						
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated
684:						
Typic Haploxeralfs, magnesic, low elevation	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Bedrock (hard) < 40" depth	1.00	Shrink-swel
		Bedrock (hard) from 20 to 40"	0.46	Shrink-swell (LEP >6)	1.00	Bedrock (ha 40"
Earlal very gravelly loam	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated
685:						
Bosquejo taxadjunct, gravelly substratum	70	Limitations		Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
686:						
Redsluff taxadjunct clay loam	70	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Shrink-swell (LEP >6)	0.99	Saturation from 2.5' to 6' depth	0.95	Shrink-swel
				Shrink-swell (LEP 3-6)	0.50	
687:						
Xerorthents, shallow	45	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (so
		Bedrock (hard) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (ha
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
687:						
Typic Haploxeralfs						
gravelly loam----------	40	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.78	Bedrock (hard) < 40" depth	0.99	Slopes > 8%
		Slopes 8 to 15%	0.63	Shrink-swell (LEP 3-6)	0.78	Shrink-swell
				Slopes 8 to 15%	0.63	
700:						
Retsongulch very						
gravelly sandy loam----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.55	Bedrock (hard) < 40" depth	1.00	Fragments (>
		Bedrock (hard) from 20 to 40"	0.46	Fragments (>3") 25 to 50%	0.55	Bedrock (har 40"
Flumewall gravelly						
sandy loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
		Fragments (>3") 25 to 50%	0.82	Fragments (>3") 25 to 50%	0.82	Fragments (>
701:						
Powellton gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.01			Shrink-swell
Obstruction gravelly						
sandy loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
702:						
Cerpone gravelly loam---	50	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.50	Slopes > 8%
		Slopes 8 to 15%	0.37	Slopes 8 to 15%	0.37	Shrink-swell
				Bedrock (hard) from 40 to 60"	0.03	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
702:						
Typic Haploxeralfs, magnesic, very gravelly loam	20	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Shrink-swell
				Bedrock (hard) from 40 to 60"	0.13	
Earlal very gravelly loam	15	Limitations		Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Bedrock (har
		Fragments (>3") 25 to 50%	0.44	Fragments (>3") 25 to 50%	0.44	Shrink-swell
703:						
Cerpone gravelly loam	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.50	Shrink-swell
				Bedrock (hard) from 40 to 60"	0.03	
Typic Haploxeralfs, magnesic, very gravelly loam	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
				Bedrock (hard) from 40 to 60"	0.13	
Earlal very gravelly loam	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
704:						
Typic Haploxeralfs, magnesic, very gravelly loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
				Bedrock (hard) from 40 to 60"	0.13	
Earlal very gravelly loam	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Cerpone gravelly loam	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
				Bedrock (hard) from 40 to 60"	0.03	
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated
705:						
Typic Haploxeralfs, magnesic, very gravelly loam	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
				Bedrock (hard) from 40 to 60"	0.13	
Earlal very gravelly loam	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
705:						
Cerpone gravelly loam---	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
				Bedrock (hard) from 40 to 60"	0.03	
Rock outcrop, serpentinite----------	15	Not rated		Not rated		Not rated
711:						
Dixmine very gravelly loam----------	45	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.06	Shrink-swel
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Slopes > 8%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Fragments (
Toadtown loam----------	40	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Slopes > 8%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Shrink-swel
712:						
Dixmine very gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.06	Shrink-swel
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (
Toadtown loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
713:						
Dixmine very gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.06	Shrink-swel
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (
Toadtown loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
714:						
Dixmine very gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.06	Shrink-swel
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (
Toadtown loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
715:						
Logtrain gravelly loam--	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) from 40 to 60"	0.13	Shrink-swel
Bottlehill very gravelly loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00	Shrink-swel
		Bedrock (hard) from 20 to 40"	0.29	Shrink-swell (LEP 3-6)	0.50	Bedrock (ha 40"
Walkermine very gravelly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (
716:						
Griffgulch very gravelly silt loam-----	40	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swel
		Fragments (>3") 25 to 50%	0.94	Fragments (>3") 25 to 50%	0.94	Fragments (
				Bedrock (hard) from 40 to 60"	0.01	Slopes 4 to
Surnuf gravelly loam----	40	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
717:						
Griffgulch very gravelly silt loam-----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Fragments (>3") 25 to 50%	0.94	Fragments (>3") 25 to 50%	0.94	Fragments (>
Surnuf gravelly loam----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
718:						
Griffgulch very gravelly silt loam-----	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Fragments (>3") 25 to 50%	0.94	Fragments (>3") 25 to 50%	0.94	Fragments (>
Surnuf gravelly loam----	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Spine taxadjunct very cobbly loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
		Fragments (>3") 25 to 50%	0.84	Fragments (>3") 25 to 50%	0.84	Fragments (>
719:						
Griffgulch very gravelly silt loam-----	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Fragments (>3") 25 to 50%	0.94	Fragments (>3") 25 to 50%	0.94	Fragments (>
Surnuf gravelly loam----	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Spine taxadjunct very cobbly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
		Fragments (>3") 25 to 50%	0.84	Fragments (>3") 25 to 50%	0.84	Fragments (>

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
720:						
Dystroxerepts extremely gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.90	Bedrock (hard) < 40" depth	1.00	Fragments (
		Bedrock (hard) from 20 to 40"	0.01	Fragments (>3") 25 to 50%	0.90	Bedrock (ha 40"
Haploxeralfs very gravelly loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP >6)	1.00	Shrink-swel
		Fragments (>3") 25 to 50%	0.99	Fragments (>3") 25 to 50%	0.99	Fragments (
Rock outcrop, metavolcanic----------	15	Not rated		Not rated		Not rated
721:						
Haploxerands, granitic till, medial sandy loam	70	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.96	Slopes 8 to 15%	0.96	Slopes > 8%
722:						
Haploxerands, granitic till, medial sandy loam	70	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
723:						
Haploxerands, granitic till, medial sandy loam	70	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
724:						
Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 8%
725:						
Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
726:						
Haploxerands, volcanic till, cobbly medial sandy loam----------	75	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
727:						
Bonneyridge sandy loam--	85	No limitations		No limitations		Limitations Slopes 4 to
728:						
Bonneyridge sandy loam--	85	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
729:						
Bonneyridge sandy loam--	85	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
730:						
Tusccoll gravelly loam--	60	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	 1.00 0.22	Limitations Slopes > 15% Shrink-swell (LEP >6)	 1.00 1.00	Limitations Slopes > 8% Shrink-swell
Schott very gravelly loam----------	25	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	 1.00 0.97 0.78	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	 1.00 0.97 0.78	Limitations Slopes > 8% Fragments (> Shrink-swell
731:						
Tusccoll gravelly loam--	50	Limitations Slopes > 15% Shrink-swell (LEP 3-6)	 1.00 0.22	Limitations Slopes > 15% Shrink-swell (LEP >6)	 1.00 1.00	Limitations Slopes > 8% Shrink-swell
Schott very gravelly loam----------	35	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	 1.00 0.97 0.78	Limitations Slopes > 15% Fragments (>3") 25 to 50% Shrink-swell (LEP 3-6)	 1.00 0.97 0.78	Limitations Slopes > 8% Fragments (> Shrink-swell

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
732:						
Bonepile taxadjunct, duripan substratum-----	90	Limitations		Limitations		Limitations
		Fragments (>3") 25 to 50%	0.07	Saturation from 2.5' to 6' depth	0.94	Fragments (
				Fragments (>3") 25 to 50%	0.07	
733:						
Haploxeralfs, terrace, gravelly loam----------	75	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25 to 50%	0.99	Shrink-swel
		Fragments (>3") 25 to 50%	0.99	Shrink-swell (LEP 3-6)	0.78	Fragments (
734:						
Haploxerands medial sandy loam-------------	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Aquic Xerofluvents peaty very fine sandy loam-------------------	35	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
		Organic matter (PT, OL or OH)	1.00	Organic matter (PT, OL or OH)	1.00	Organic mat OH)
735:						
Fluvaquents, loamy------	80	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
801:						
Obstruction gravelly sandy loam-------------	70	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 8%
802:						
Obskel very gravelly sandy loam-------------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Obstruction gravelly sandy loam-------------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
803:						
Obskel very gravelly sandy loam----------	40	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
Obstruction gravelly sandy loam----------	40	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
804:						
Obskel very gravelly sandy loam----------	35	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
Obstruction gravelly sandy loam----------	25	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
Retsongulch very gravelly sandy loam----	20	Limitations Slopes > 15% Fragments (>3") 25 to 50% Bedrock (hard) from 20 to 40"	 1.00 0.55 0.46	Limitations Slopes > 15% Bedrock (hard) < 40" depth Fragments (>3") 25 to 50%	 1.00 1.00 0.55	Limitations Slopes > 8% Fragments (Bedrock (ha 40"
805:						
Bottlehill very gravelly loam----------	50	Limitations Shrink-swell (LEP 3-6) Bedrock (hard) from 20 to 40"	 0.50 0.29	Limitations Bedrock (hard) < 40" depth Shrink-swell (LEP 3-6)	 1.00 0.50	Limitations Slopes 4 to Shrink-swel Bedrock (ha 40"
Walkermine very gravelly loam----------	20	Limitations Bedrock (hard) < 20" depth Slopes 8 to 15% Fragments (>3") 25 to 50%	 1.00 0.84 0.01	Limitations Bedrock (hard) < 40" depth Slopes 8 to 15% Fragments (>3") 25 to 50%	 1.00 0.84 0.01	Limitations Slopes > 8% Bedrock (ha Fragments (
Logtrain gravelly loam--	20	Limitations Shrink-swell (LEP 3-6)	 0.01	Limitations Bedrock (hard) from 40 to 60"	 0.13	Limitations Slopes 4 to Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
806:						
Bottlehill very gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00	Shrink-swell
		Bedrock (hard) from 20 to 40"	0.29	Shrink-swell (LEP 3-6)	0.50	Bedrock (har 40"
Walkermine very gravelly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>
Logtrain gravelly loam--	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) from 40 to 60"	0.13	Shrink-swell
807:						
Bottlehill very gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00	Shrink-swell
		Bedrock (hard) from 20 to 40"	0.29	Shrink-swell (LEP 3-6)	0.50	Bedrock (har 40"
Logtrain gravelly loam--	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) from 40 to 60"	0.13	Shrink-swell
Walkermine very gravelly loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
808:						
Bottlehill very gravelly loam----------	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00	Shrink-swel
		Bedrock (hard) from 20 to 40"	0.29	Shrink-swell (LEP 3-6)	0.50	Bedrock (ha 40"
Walkermine very gravelly loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (
Logtrain gravelly loam--	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) from 40 to 60"	0.13	Shrink-swel
809:						
Walkermine very gravelly loam----------	45	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (
Bottlehill very gravelly loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00	Shrink-swel
		Bedrock (hard) from 20 to 40"	0.29	Shrink-swell (LEP 3-6)	0.50	Bedrock (ha 40"
Logtrain gravelly loam--	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) from 40 to 60"	0.13	Shrink-swel
Rock outcrop, metavolcanic----------	15	Not rated		Not rated		Not rated

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
810:						
Dixmine very gravelly loam	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.06	Shrink-swel
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (
Mac gravelly loam	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swel
				Bedrock (soft) from 20 to 40"	0.03	
Spine very gravelly loam	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swel
811:						
Powellton gravelly loam	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.01			Shrink-swel
Toadtown loam	40	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Slopes 4 to
						Shrink-swel
812:						
Powellton gravelly loam	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.01			Shrink-swel
Toadtown loam	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
813:						
Powellton gravelly loam	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.01			Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limi
813:						
Toadtown loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swel
814:						
Mountyana gravelly loam	80	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.22	Slopes > 8%
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Shrink-swel
815:						
Mountyana gravelly loam	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78	Shrink-swell (LEP 3-6)	0.22	Shrink-swel
817:						
Lydon very gravelly medial coarse sandy loam----------	80	Limitations		Limitations		Limitations
		Bedrock (hard) from 20 to 40"	0.11	Bedrock (hard) < 40" depth	1.00	Slopes 4 to
				Fragments (>3") 25 to 50%	0.02	Bedrock (ha
		Fragments (>3") 25 to 50%	0.02			40"
						Fragments (
818:						
Lydon very gravelly medial coarse sandy loam----------	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.11	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
				Fragments (>3") 25 to 50%	0.02	40"
		Fragments (>3") 25 to 50%	0.02			Fragments (
819:						
Lydon very gravelly medial coarse sandy loam----------	65	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.11	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
				Fragments (>3") 25 to 50%	0.02	40"
		Fragments (>3") 25 to 50%	0.02			Fragments (
Rock outcrop, mudflow breccia----------	20	Not rated		Not rated		Not rated

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
820:						
Lydon very gravelly medial coarse sandy loam	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.11	Bedrock (hard) < 40" depth	1.00	Bedrock (ha 40"
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Fragments (
Rock outcrop, mudflow breccia	25	Not rated		Not rated		Not rated
821:						
Lydon very gravelly medial coarse sandy loam	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.11	Bedrock (hard) < 40" depth	1.00	Bedrock (ha 40"
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Fragments (
Rock outcrop, mudflow breccia	30	Not rated		Not rated		Not rated
822:						
Bonepile gravelly medial loam	85	No limitations		No limitations		Limitations
						Slopes 4 to
823:						
Bonepile gravelly medial loam	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
824:						
Beecee very gravelly medial loam	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
825:						
Beecee very gravelly medial loam	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
825:						
Lydon very gravelly medial coarse sandy loam	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.11	Bedrock (hard) < 40" depth	1.00	Bedrock (ha 40"
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Fragments (
826:						
Redbone gravelly medial sandy loam	80	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 8%
827:						
Redbone gravelly medial sandy loam	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
829:						
Paradiso loam	80	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
						Slopes 4 to
830:						
Paradiso loam	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
831:						
Surnuf gravelly loam	40	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
Bigridge loam	30	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
Spine very gravelly loam	15	Limitations		Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Bedrock (ha
		Slopes 8 to 15%	0.04	Slopes 8 to 15%	0.04	Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
832:						
Surnuf gravelly loam----	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Bigridge loam----------	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Spine very gravelly loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swel
833:						
Surnuf gravelly loam----	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Bigridge loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Spine very gravelly loam----------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swel
834:						
Hietanen gravelly loam--	50	Limitations		No limitations		Limitations
		Shrink-swell (LEP 3-6)	0.01			Slopes 4 to
						Shrink-swel
Mac gravelly loam-------	30	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Slopes 4 to
				Bedrock (soft) from 20 to 40"	0.03	Shrink-swel
835:						
Hietanen gravelly loam--	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.01			Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
835:						
Mac gravelly loam-------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swell
				Bedrock (soft) from 20 to 40"	0.03	
836:						
Hietanen gravelly loam--	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.01			Shrink-swell
Mac gravelly loam-------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swell
				Bedrock (soft) from 20 to 40"	0.03	
Spine very gravelly loam-------------------	15	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swell
837:						
Hietanen gravelly loam--	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.01			Shrink-swell
Spine very gravelly loam-------------------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swell
Mac gravelly loam-------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swell
				Bedrock (soft) from 20 to 40"	0.03	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
838:						
Dixmine very gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	0.99	Shrink-swell (LEP 3-6)	0.06	Shrink-swell
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>
Spine very gravelly loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swell
Mac gravelly loam-------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.22	Shrink-swell (LEP 3-6)	0.22	Shrink-swell
				Bedrock (soft) from 20 to 40"	0.03	
839:						
Chawanakee gravelly sandy loam----------	55	Limitations		Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (sof
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 8%
Billscabin gravelly sandy loam----------	35	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes > 8%
841:						
Billscabin gravelly sandy loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Bonneyridge sandy loam--	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
842:						
Billscabin gravelly sandy loam----------	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
842:						
Bonneyridge sandy loam--	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
846:						
Bonneyridge sandy loam--	60	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
Lewisflat loam----------	20	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
847:						
Bonneyridge sandy loam--	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Lewisflat loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
848:						
Bonneyridge sandy loam--	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Lewisflat loam----------	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
850:						
Lewisflat loam----------	85	No limitations		No limitations		No limitation
851:						
Lewisflat loam----------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
852:						
Lewisflat loam----------	75	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
860:						
Toadtown gravelly loam--	60	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
860:						
Powellton silt loam-----	20	Limitations		Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.78	Slopes 8 to 15%	0.01	Slopes > 8%
		Slopes 8 to 15%	0.01			Shrink-swell
861:						
Toadtown gravelly loam--	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Powellton silt loam-----	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78			Shrink-swell
862:						
Toadtown gravelly loam--	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Powellton silt loam-----	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78			Shrink-swell
863:						
Toadtown gravelly loam--	60	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
Powellton silt loam-----	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP 3-6)	0.78			Shrink-swell
880:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
Jocal taxadjunct gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
881:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Jocal taxadjunct gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
882:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Jocal taxadjunct gravelly loam----------	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
883:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
Jocal taxadjunct gravelly loam----------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
885:						
Rogerville silt loam----	75	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
886:						
Rogerville silt loam----	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
892:						
Rogerville silt loam----	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
893:						
Rogerville silt loam----	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swel
902:						
Lava Flows, Lovejoy basalt----------	50	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam----------	40	Limitations		Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (ha
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (
						Slopes 4 to
903:						
Mudwash gravelly medial sandy loam----------	45	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
Timberisland very gravelly medial sandy loam----------	25	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.05	Bedrock (hard) from 40 to 60"	0.61	Fragments (
				Fragments (>3") 25 to 50%	0.05	
Lavatop gravelly medial fine sandy loam--------	20	Limitations		Limitations		Limitations
		Bedrock (hard) from 20 to 40"	0.82	Bedrock (hard) < 40" depth	1.00	Slopes > 8%
				Fragments (>3") 25 to 50%	0.01	Bedrock (ha
		Fragments (>3") 25 to 50%	0.01	Slopes 8 to 15%	0.01	40"
		Slopes 8 to 15%	0.01			Fragments (

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
904:						
Lava flows, Lovejoy basalt	60	Not rated		Not rated		Not rated
Lavatop gravelly medial fine sandy loam	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) from 20 to 40"	0.82	Bedrock (hard) < 40" depth	1.00	Bedrock (har 40"
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25 to 50%	0.01	Fragments (>
905:						
Lava flows, Lovejoy basalt	60	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>
906:						
Lava flows, Lovejoy basalt	60	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
		Fragments (>3") >50%	1.00	Fragments (>3") >50%	1.00	Fragments (>
911:						
Endoaquolls loam	75	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
923:						
Powderhouse medial sandy loam	45	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Bedrock (soft) from 20 to 40"	0.06	Slopes > 8%
				Slopes 8 to 15%	0.01	

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
923:						
McNair medial coarse sandy loam	25	Limitations Slopes 8 to 15%	 0.01	Limitations Slopes 8 to 15%	 0.01	Limitations Slopes > 8%
Greenwell medial sandy loam	20	Limitations Slopes 8 to 15%	 0.01	Limitations Bedrock (soft) from 20 to 40" Slopes 8 to 15%	 0.26 0.01	Limitations Slopes > 8%
924:						
Powderhouse medial sandy loam	45	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	 1.00 0.06	Limitations Slopes > 8%
McNair medial coarse sandy loam	25	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
Greenwell medial sandy loam	20	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	 1.00 0.26	Limitations Slopes > 8%
925:						
Powderhouse medial sandy loam	45	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	 1.00 0.06	Limitations Slopes > 8%
McNair medial coarse sandy loam	25	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
Greenwell medial sandy loam	20	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15% Bedrock (soft) from 20 to 40"	 1.00 0.26	Limitations Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
930:						
Shakeridge gravelly medial coarse sandy loam	50	Limitations Slopes 8 to 15%	 0.01	Limitations Slopes 8 to 15%	 0.01	Limitations Slopes > 8%
Timberisland very gravelly medial sandy loam	40	Limitations Fragments (>3") 25 to 50% Slopes 8 to 15%	 0.05 0.01	Limitations Bedrock (hard) from 40 to 60" Fragments (>3") 25 to 50% Slopes 8 to 15%	 0.61 0.05 0.01	Limitations Slopes > 8% Fragments (
931:						
Shakeridge gravelly medial coarse sandy loam	40	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
Mudwash gravelly medial sandy loam	25	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
Timberisland very gravelly medial sandy loam	15	Limitations Slopes > 15% Fragments (>3") 25 to 50%	 1.00 0.05	Limitations Slopes > 15% Bedrock (hard) from 40 to 60" Fragments (>3") 25 to 50%	 1.00 0.61 0.05	Limitations Slopes > 8% Fragments (
932:						
Shakeridge gravelly medial coarse sandy loam	50	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%
Mudwash gravelly medial sandy loam	35	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15%	 1.00	Limitations Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Smal
		Limitations	Value	Limitations	Value	Limi
933:						
Shakeridge gravelly medial coarse sandy loam	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
934:						
Mudwash gravelly medial sandy loam	80	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
939:						
Fluvaquentic Humaquepts very fine sandy loam	85	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation
940:						
Dejonah gravelly loam	50	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
Stagpoint loam	30	Limitations		Limitations		Limitations
		Fragments (>3") 25 to 50%	0.46	Fragments (>3") 25 to 50%	0.46	Slopes > 8%
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Fragments (
941:						
Dejonah gravelly loam	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
Stagpoint loam	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.46	Fragments (>3") 25 to 50%	0.46	Fragments (
942:						
Stagpoint loam	50	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.46	Fragments (>3") 25 to 50%	0.46	Fragments (
Dejonah gravelly loam	30	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
948:						
Stagpoint loam----------	55	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.46	Fragments (>3") 25 to 50%	0.46	Fragments (>
Dejonah gravelly loam---	35	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
949:						
Rogerville taxadjunct fine sandy loam--------	80	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
				Shrink-swell (LEP 3-6)	0.06	
950:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam--------	40	Limitations		Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes > 8%
Rock outcrop, olivine basalt, andesite, or mudflow----------	25	Not rated		Not rated		Not rated
Powderhouse medial sandy loam----------	20	Limitations		Limitations		Limitations
		Slopes 8 to 15%	0.01	Bedrock (soft) from 20 to 40"	0.06	Slopes > 8%
				Slopes 8 to 15%	0.01	
951:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam--------	40	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (har
Rock outcrop, andesite--	25	Not rated		Not rated		Not rated

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
951:						
Powderhouse medial sandy loam	20	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
				Bedrock (soft) from 20 to 40"	0.06	
960:						
Surnuf gravelly loam, high elevation	85	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
						Slopes 4 to
961:						
Surnuf gravelly loam, high elevation	85	Limitations		Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.37	Slopes 8 to 15%	0.37	Shrink-swell
962:						
Surnuf gravelly loam, high elevation	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
963:						
Surnuf gravelly loam, high elevation	85	Limitations		Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell
990:						
Riverwash, frequently flooded	100	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation < 18" depth	1.00	Saturation < 2.5' depth	1.00	Saturation <

Table 16a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small
		Limitations	Value	Limitations	Value	Limit
991:						
Xerofluvents sandy loam, frequently flooded	75	Limitations		Limitations		Limitations
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >=
		Saturation from 18 to 30" depth	0.03	Saturation < 2.5' depth	1.00	Saturation depth
						Slopes 4 to
995:						
Pits, gravel	100	Not rated		Not rated		Not rated
996:						
Dumps, excavated material	100	Not rated		Not rated		Not rated
997:						
Pits	95	Not rated		Not rated		Not rated
998:						
Dumps, landfill	100	Not rated		Not rated		Not rated
999:						
Water	100	Not rated		Not rated		Not rated
DAM:						
Dam, manmade	100	Not rated		Not rated		Not rated

The interpretation for dwellings without basements evaluates the following soil properties, some at variable dep flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibil organic Unified classes for low soil strength (PT, OL, and OH), depth to hard or soft bedrock, depth to a thick or th fragments more than 3 inches in size.

The interpretation for dwellings with basements evaluates the following soil properties, some at variable depths flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibil organic Unified classes for low strength (PT, OL, and OH), depth to hard or soft bedrock, depth to a thick or thin ce fragments more than 3 inches in size.

The interpretation for small commercial buildings evaluates the following soil properties, some at variable dept flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibil depth to hard or soft bedrock, depth to a thick or thin cemented pan, and fragments more than 3 inches in size.

Table 16b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for
investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the
limitation. The rating is based on the limitation with the highest value. Only the three highest va
listed. There may be more limitations. Fine-earth fractions and rock fragments are reported on a we
explanation of the rating criteria and of the abbreviations used in describing the limitations is g
table)

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow e	
		Limitations	Value	Limitat	
100:					
Anita clay	60	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat	
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'	
		Ponding (any duration)	1.00	Caving potential	
Galt clay	25	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Ponding (any durat	
		Ponding (any duration)	1.00	Saturation < 2.5'	
		Saturation < 12" depth	1.00	Caving potential	
104:					
Bosquejo clay	85	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat	
		Ponding (any duration)	1.00	Caving potential	
		Shrink-swell (LEP >6)	1.00	Saturation from 2.	
105:					
Busacca clay loam	85	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat	
		Ponding (any duration)	1.00	Saturation from 2.	
		Shrink-swell (LEP >6)	1.00	Caving potential	
108:					
Tuscan gravelly loam	45	Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 2.5'	
		Shrink-swell (LEP >6)	1.00	Caving potential	
		AASHTO GI >8 (low soil strength)	1.00		
Igo gravelly loam	20	Limitations		Limitations	
		Saturation < 12" depth	1.00	Saturation < 2.5'	
		AASHTO GI >8 (low soil strength)	1.00	Caving potential	
		Shrink-swell (LEP >6)	0.99		

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
108:				
Anita clay	15	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
109:				
Bosquejo clay loam	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Caving potential
		Ponding (any duration)	1.00	Saturation from 2.5
110:				
Bosquejo silt loam, overwash, occasionally flooded	90	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Caving potential
		Ponding (any duration)	1.00	Saturation from 2.5
111yu:				
Auburn loam	40	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes 8 to 15%	0.63	Slopes 8 to 15%
				Caving potential
Sobrante loam	40	Limitations		Limitations
		Slopes 8 to 15%	0.63	Bedrock (hard) < 4
		Shrink-swell (LEP 3-6)	0.50	Bedrock (soft) fro
		AASHTO GI 5-8 (soil strength)	0.22	Slopes 8 to 15%
114yu:				
Auburn gravelly loam	40	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes 8 to 15%	0.63	Slopes 8 to 15%
				Caving potential
Sobrante gravelly loam	40	Limitations		Limitations
		Slopes 8 to 15%	0.63	Caving potential
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 4
				Slopes 8 to 15%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
118:				
Xerorthents, tailings	80	Limitations		Limitations
		Frequent or occasional flooding	1.00	Caving potential
				Frequent or occasio
118co:				
Clear Lake clay, frequently flooded	90	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
		Frequent or occasional flooding	1.00	Saturation from 2.5
119:				
Xerorthents, tailings	70	Limitations		Limitations
		Frequent or occasional flooding	1.00	Caving potential
				Frequent or occasio
Urban land	30	Not rated		Not rated
119yu:				
Auburn gravelly loam	30	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Sobrante gravelly loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.50	Caving potential
				Bedrock (hard) < 4
Rock outcrop	20	Not rated		Not rated
120:				
Gridley taxadjunct clay loam	80	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation < 2.5'
		Saturation from 12 to 30" depth	0.94	Caving potential
121:				
Boga loam	45	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		AASHTO GI >8 (low soil strength)	1.00	Saturation from 2.5
		Shrink-swell (LEP 3-6)	0.56	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
121:				
Loemstone loam	40	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		AASHTO GI >8 (low soil strength)	1.00	Saturation from 2.5
		Shrink-swell (LEP 3-6)	0.56	Caving potential
121su:				
Columbia fine sandy loam, frequently flooded	80	Limitations		Limitations
		Frequent or occasional flooding	1.00	Saturation from 2.5
				Frequent or occasi
				Caving potential
125:				
Gridley taxadjunct loam	65	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation < 2.5'
		Shrink-swell (LEP >6)	0.99	Clay from 40 to 60
Calcic Haploxerolls sandy loam	20	Limitations		Limitations
		Rare flooding	0.50	Saturation < 2.5'
				Caving potential
126:				
Liveoak sandy loam	85	No limitations		Limitations
				Caving potential
				Saturation < 2.5'
127:				
Gridley taxadjunct loam	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation < 2.5'
		Shrink-swell (LEP >6)	0.99	Clay from 40 to 60
130:				
Eastbiggs loam	80	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Saturation < 2.5'
		Shrink-swell (LEP >6)	1.00	Pan (thin) from 20
		Saturation from 12 to 30" depth	0.96	Clay from 40 to 60

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
133:				
Eastbiggs loam	50	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Saturation < 2.5'
		Shrink-swell (LEP >6)	1.00	Pan (thin) from 20
		Saturation from 12 to 30" depth	0.96	Clay from 40 to 60
Galt clay loam	40	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation < 2.5'
		Saturation < 12" depth	1.00	Caving potential
136:				
Duric Xerarents, cut	35	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
Duric Xerarents, fill	30	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
				Saturation from 2.5
				Caving potential
Eastbiggs fine sandy loam, leveled	25	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		Saturation from 12 to 30" depth	0.96	Saturation < 2.5'
		Shrink-swell (LEP 3-6)	0.06	Pan (thin) from 20
138su:				
Liveoak sandy clay loam	85	No limitations		Limitations
				Saturation < 2.5'
				Caving potential
139su:				
Liveoak taxadjunct loam, frequently flooded	45	Limitations		Limitations
		Frequent or occasional flooding	1.00	Frequent or occasi
				Saturation from 2.5
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
139su:				
Galt taxadjunct clay loam, frequently flooded	40	Limitations		Limitations
		Frequent or occasional flooding	1.00	Saturation < 2.5'
		AASHTO GI >8 (low soil strength)	1.00	Frequent or occasi
		Saturation from 12 to 30" depth	0.88	Bulk density > 1.8
143su:				
Marcum clay loam	45	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
		Shrink-swell (LEP 3-6)	0.50	Caving potential
Gridley clay loam	40	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
		Shrink-swell (LEP >6)	1.00	Caving potential
				Bedrock (soft) fro
149yu:				
Flanly sandy loam	80	Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%
		Shrink-swell (LEP 3-6)	0.50	Bedrock (soft) fro
		AASHTO GI 5-8 (soil strength)	0.22	Caving potential
150:				
Columbia stratified sand to fine sandy loam	85	Limitations		Limitations
		Frequent or occasional flooding	1.00	Caving potential
				Saturation from 2.5
				Frequent or occasi
150su:				
Olashes sandy loam	85	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Caving potential
151yu:				
Flanly sandy loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.50	Bedrock (soft) fro
		AASHTO GI 5-8 (soil strength)	0.22	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
152:				
Gianella fine sandy loam, frequently flooded	85	Limitations Frequent or occasional flooding	 1.00	Limitations Caving potential Frequent or occasi
153:				
Gianella sandy loam, frequently flooded	85	Limitations Frequent or occasional flooding	 1.00	Limitations Caving potential Frequent or occasi
154:				
Gianella silt loam, frequently flooded	85	Limitations Frequent or occasional flooding	 1.00	Limitations Caving potential Frequent or occasi
158:				
Gianella fine sandy loam, occasionally flooded	85	Limitations Frequent or occasional flooding	 1.00	Limitations Caving potential Frequent or occasi
160:				
Gianella loam, occasionally flooded	85	Limitations Frequent or occasional flooding	 1.00	Limitations Caving potential Frequent or occasi
161:				
Gianella fine sandy loam, rarely flooded	90	Limitations Rare flooding	 0.50	Limitations Caving potential
162:				
Gianella loam, rarely flooded	90	Limitations Rare flooding	 0.50	Limitations Caving potential
163yu:				
Holillipah loamy sand	85	Limitations Frequent or occasional flooding	 1.00	Limitations Caving potential Frequent or occasi

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
165yu:				
Holland loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.50	Caving potential
Hoda loam	25	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Slopes > 15%
		Slopes > 15%	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.50	Clay from 40 to 60
Hotaw loam	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.50	Bedrock (soft) fro
				Caving potential
173yu:				
Hotaw loam	45	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.50	Bedrock (soft) fro
				Caving potential
Chawanakee gravelly sandy loam	20	Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Holland loam	15	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.50	Caving potential
175:				
Farwell clay loam, rarely flooded	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Rare flooding	0.50	
		Shrink-swell (LEP 3-6)	0.06	
176:				
Farwell loam, occasionally flooded	85	Limitations		Limitations
		Frequent or occasional flooding	1.00	Frequent or occasi
		AASHTO GI >8 (low soil strength)	1.00	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
176yu:				
Jocal loam	80	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Slopes 8 to 15%
		Slopes 8 to 15%	0.63	Caving potential
		Shrink-swell (LEP 3-6)	0.50	
177:				
Farwell silt loam, occasionally flooded	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Frequent or occasi
		Frequent or occasional flooding	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.68	
178:				
Arbuckle gravelly loam	87	Limitations		Limitations
		Rare flooding	0.50	Caving potential
		AASHTO GI 5-8 (soil strength)	0.22	
179:				
Moda taxadjunct loam	65	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Clay from 40 to 60
Arbuckle gravelly loam	20	Limitations		Limitations
		Rare flooding	0.50	Caving potential
		AASHTO GI 5-8 (soil strength)	0.22	
180:				
Dodgeland silty clay loam, occasionally flooded	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
181:				
Dodgeland silty clay loam, frequently flooded	80	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
188yu:				
Mariposa taxadjunct gravelly loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (hard) from 20 to 40"	0.95	Slopes > 15%
				Caving potential
189:				
Esquon silt loam, overwash--------	90	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Caving potential
		Ponding (any duration)	1.00	Saturation < 2.5'
189yu:				
Mariposa taxadjunct gravelly loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (hard) from 20 to 40"	0.95	Slopes > 15%
				Caving potential
196yu:				
Mildred cobbly loam----------	80	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Slopes > 15%
		Slopes > 15%	1.00	Bedrock (soft) fro
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
200:				
Parrott silt loam, occasionally flooded----------	85	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		Frequent or occasional flooding	1.00	Frequent or occasi
		AASHTO GI >8 (low soil strength)	1.00	Saturation from 2.5
201:				
Parrott silt loam, frequently flooded----------	85	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		Frequent or occasional flooding	1.00	Frequent or occasi
		AASHTO GI >8 (low soil strength)	1.00	Saturation from 2.5
203:				
Kusalslough silty clay loam, occasionally flooded----------	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation from 2.5
		Frequent or occasional flooding	1.00	Clay from 40 to 60

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
205:				
Parrott silt loam, frequently flooded	50	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		Frequent or occasional flooding	1.00	Frequent or occasi
		AASHTO GI >8 (low soil strength)	1.00	Saturation from 2.5
Vermet silt loam, frequently flooded	35	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation < 2.5'
		Saturation < 12" depth	1.00	Frequent or occasi
206:				
Islandbar sandy loam	60	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
Chawanakee gravelly sandy loam	30	Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
207:				
Islandbar sandy loam	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Chawanakee gravelly sandy loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (soft) < 2
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%
				Caving potential
208:				
Islandbar sandy loam	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Chawanakee gravelly sandy loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (soft) < 2
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
209:				
Islandbar sandy loam	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Chawanakee gravelly sandy loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (soft) < 2
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%
				Caving potential
210:				
Featherfalls sandy loam	50	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.32	Caving potential
		Slopes 8 to 15%	0.01	Slopes 8 to 15%
Islandbar sandy loam	35	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
211:				
Featherfalls sandy loam	55	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.32	Caving potential
Islandbar sandy loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
212:				
Featherfalls sandy loam	55	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.32	Caving potential
Islandbar sandy loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
213:				
Featherfalls sandy loam	45	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.32	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow e
		Limitations	Value	Limitat
213:				
Islandbar sandy loam----------	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential
214:				
Crystalhill gravelly coarse sandy loam----------	35	Limitations Slopes 8 to 15%	0.16	Limitations Caving potential Slopes 8 to 15%
Oregongulch gravelly sandy loam---	20	Limitations Slopes 8 to 15%	0.16	Limitations Caving potential Bedrock (soft) fro Slopes 8 to 15%
Craigsaddle coarse sandy loam-----	20	No limitations		Limitations Caving potential
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
215:				
Crystalhill gravelly coarse sandy loam----------	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential
Oregongulch gravelly sandy loam---	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) fro
Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
216:				
Crystalhill gravelly coarse sandy loam----------	35	Limitations Slopes > 15%	1.00	Limitations Slopes > 15% Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
216:				
Oregongulch gravelly sandy loam---	20	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) fro
Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15% Caving potential
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
217:				
Crystalhill gravelly coarse sandy loam-----------	35	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15% Caving potential
Oregongulch gravelly sandy loam---	20	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15% Caving potential Bedrock (soft) fro
Craigsaddle coarse sandy loam-----	20	Limitations Slopes > 15%	 1.00	Limitations Slopes > 15% Caving potential
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
218:				
Rock outcrop, quartz diorite------	60	Not rated		Not rated
Lithic Xerorthents gravelly sandy loam-----------	20	Limitations Bedrock (hard) < 20" depth Slopes > 15%	 1.00 1.00	Limitations Bedrock (hard) < 4 Slopes > 15% Caving potential
Chawanakee gravelly sandy loam----	15	Limitations Bedrock (soft) < 20" depth Slopes > 15%	 1.00 1.00	Limitations Bedrock (soft) < 2 Slopes > 15% Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
219:				
Rock outcrop, quartz diorite------	60	Not rated		Not rated
Lithic Xerorthents gravelly sandy loam----------	20	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Chawanakee gravelly sandy loam----	15	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (soft) < 2
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%
				Caving potential
220:				
Esquon clay, frequently flooded---	60	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
Clear Lake silty clay loam, overwash----------	30	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
221yu:				
Sites loam----------	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
		Shrink-swell (LEP 3-6)	0.50	Caving potential
222yu:				
Sites loam----------	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Slopes 8 to 15%
		Slopes 8 to 15%	0.63	Clay from 40 to 60
		Shrink-swell (LEP 3-6)	0.50	Caving potential
225yu:				
Sites gravelly loam, bedrock substratum----------	80	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.50	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
226yu:				
Sites gravelly loam, bedrock substratum	80	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Slopes 8 to 15%	0.63	Slopes 8 to 15%
		Shrink-swell (LEP 3-6)	0.50	
227yu:				
Sites gravelly loam, bedrock substratum	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.50	
242yu:				
Surnuf loam	80	Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%
				Clay from 40 to 60%
				Caving potential
243yu:				
Surnuf loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Clay from 40 to 60%
				Caving potential
244yu:				
Surnuf loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Clay from 40 to 60%
				Caving potential
245:				
Surnuf loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Clay from 40 to 60%
				Caving potential
248yu:				
Trainer loam	85	Limitations		Limitations
		Frequent or occasional flooding	1.00	Saturation from 2.5
				Frequent or occasio
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
250:				
Llanoseco, occasionally flooded---	90	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Caving potential
		Ponding (any duration)	1.00	Frequent or occasi
252:				
Whitecabin silty clay, occasionally flooded----------	60	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
Ordferry silty clay, occasionally flooded----------	25	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
252yu:				
Woodleaf gravelly loam----------	80	Limitations		Limitations
		Bedrock (hard) from 20 to 40"	0.64	Bedrock (hard) < 4
		Shrink-swell (LEP 3-6)	0.50	Caving potential
		Slopes 8 to 15%	0.04	Clay from 40 to 60
253yu:				
Woodleaf gravelly loam----------	80	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (hard) from 20 to 40"	0.64	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.50	Caving potential
255:				
Whitecabin silty clay loam, occasionally flooded----------	60	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
Ordferry silty clay, occasionally flooded----------	30	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
256:				
Whitecabin silt loam, occasionally flooded	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
257:				
Llanoseco, frequently flooded	90	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Caving potential
		Ponding (any duration)	1.00	Frequent or occasi
258:				
Codora, occasionally flooded	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation from 2.5
		Frequent or occasional flooding	1.00	Frequent or occasi
260:				
Ordferry silty clay, occasionally flooded	90	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
280:				
Columbia taxadjunct stratified very fine sandy loam	80	Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 2.5'
		Frequent or occasional flooding	1.00	Frequent or occasi
				Caving potential
290:				
Perkins gravelly loam	90	No limitations		Limitations
				Caving potential
				Saturation from 2.5
300:				
Redsluff gravelly loam	80	Limitations		Limitations
		Rare flooding	0.50	Caving potential
		Shrink-swell (LEP 3-6)	0.01	Saturation from 2.5

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
301:				
Wafap gravelly loam	70	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Fragments (>3") >50%	1.00	Fragments (>3") >5
Hamslough clay	15	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		Saturation < 12" depth	1.00	Saturation < 2.5'
		Frequent or occasional flooding	1.00	Caving potential
302:				
Redtough loam	50	Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 2.5'
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.01	
Redswale cobbly loam	35	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		Saturation < 12" depth	1.00	Saturation < 2.5'
		AASHTO GI 5-8 (soil strength)	0.78	Fragments (>3") 25
303:				
Munjar gravelly loam	60	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Saturation from 12 to 30" depth	0.56	Caving potential
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25
Tuscan taxadjunct gravelly clay loam	20	Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 2.5'
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	
Galt clay	10	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation < 2.5'
		Saturation < 12" depth	1.00	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
304:				
Redtough loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.01	
305:				
Redtough gravelly loam	45	Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 2.5'
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
Redswale loam	25	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		Saturation < 12" depth	1.00	Saturation < 2.5'
				Caving potential
Anita, gravelly duripan	20	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Pan (thin) < 20" d
		Thin pan <= 20"	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
306:				
Duric Xerarents, fill	50	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		Saturation < 12" depth	1.00	Saturation < 2.5'
				Clay from 40 to 60
Duric Xerarents, cut	40	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		Saturation < 12" depth	1.00	Saturation < 2.5'
				Caving potential
307:				
Duric Xerarents clay loam, leveled	70	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		Saturation < 12" depth	1.00	Saturation < 2.5'
		Shrink-swell (LEP >6)	1.00	Caving potential
310:				
Kimball loam	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
317:				
Thompsonflat loam	75	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.06	Saturation from 2.5
				Clay from 40 to 60%
318:				
Thompsonflat fine sandy loam	50	No limitations		Limitations
				Caving potential
				Saturation from 2.5
				Clay from 40 to 60%
Oroville gravelly fine sandy loam	40	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Saturation < 12" depth	0.99	Caving potential
320:				
Vistarobles sandy loam	50	Limitations		Limitations
		Thin pan <= 20"	1.00	Pan (thin) < 20" de
		Shrink-swell (LEP >6)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation < 2.5'
Redding loam	40	Limitations		Limitations
		AASHTO GI 5-8 (soil strength)	0.22	Saturation < 2.5'
		Saturation from 12 to 30" depth	0.19	Clay from 40 to 60%
				Caving potential
321:				
Durixeralfs, fine-loamy, gravelly fine sandy loam	50	Limitations		Limitations
		Saturation from 12 to 30" depth	0.56	Saturation < 2.5'
				Caving potential
				Pan (thin) from 20
Durixeralfs, loamy-skeletal, gravelly fine sandy loam	20	Limitations		Limitations
		Thin pan <= 20"	1.00	Pan (thin) < 20" de
		Ponding (any duration)	1.00	Ponding (any durat
		Saturation < 12" depth	1.00	Saturation < 2.5'

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
321:				
Typic Petraquepts silty clay------	15	Limitations		Limitations
		Thin pan <= 20"	1.00	Pan (thin) < 20" de
		Shrink-swell (LEP >6)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Saturation < 2.5' d
330:				
Wilsoncreek loam, occasionally flooded----------	60	Limitations		Limitations
		Frequent or occasional flooding	1.00	Saturation from 2.5
				Frequent or occasio
				Caving potential
Trainer loam, occasionally flooded----------	25	Limitations		Limitations
		Frequent or occasional flooding	1.00	Saturation from 2.5
		AASHTO GI >8 (low soil strength)	1.00	Frequent or occasio
				Caving potential
331:				
Thompsonflat loam----------	85	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.06	Saturation from 2.5
335:				
Galt clay loam----------	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Saturation < 2.5' d
		Saturation < 12" depth	1.00	Caving potential
336:				
Galt clay----------	90	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Saturation < 2.5' d
		Saturation < 12" depth	1.00	Caving potential
337:				
Galt clay loam----------	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Saturation < 2.5' d
		Saturation < 12" depth	1.00	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
338:				
Oxyaquic Xerofluvents silt loam---	90	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		Rare flooding	0.50	Caving potential
				Saturation from 2.5
339:				
Oxyaquic Xerofluvents sandy loam, frequently flooded---	90	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		Frequent or occasional flooding	1.00	Caving potential
				Saturation from 2.5
340:				
Rock outcrop, Lovejoy basalt------	35	Not rated		Not rated
Thermalrocks very gravelly loam---	25	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Fragments (>3") 25 to 50%	0.01	Caving potential
				Fragments (>3") 25
Campbellhills gravelly loam-------	20	Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 2.5'
		Shrink-swell (LEP 3-6)	0.82	Caving potential
				Bedrock (hard) fro
341:				
Elsey loam------------------------	25	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (hard) < 4
		Saturation from 12 to 30" depth	0.90	Saturation < 2.5'
		Fragments (>3") 25 to 50%	0.10	Caving potential
Beatsonhollow gravelly loam-------	25	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Ponding (any duration)	1.00	Ponding (any durat
		Saturation < 12" depth	1.00	Saturation < 2.5'
Campbellhills gravelly loam-------	20	Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 2.5'
		Shrink-swell (LEP 3-6)	0.82	Caving potential
				Bedrock (hard) fro
Rock outcrop, Lovejoy basalt------	20	Not rated		Not rated

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
342:				
Thermalrocks very gravelly loam---	40	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.01	Caving potential
Beatsonhollow taxadjunct fine sandy loam----------	35	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Saturation < 12" depth	1.00	Saturation < 2.5'
				Caving potential
Rock outcrop, Lovejoy basalt------	15	Not rated		Not rated
343:				
Coalcanyon very cobbly loam-------	50	Limitations		Limitations
		Fragments (>3") >50%	0.99	Fragments (>3") >5
		Slopes 8 to 15%	0.16	Slopes 8 to 15%
				Caving potential
Coonhollow gravelly loam----------	35	Limitations		Limitations
		Fragments (>3") >50%	1.00	Fragments (>3") >5
		Slopes 8 to 15%	0.16	Slopes 8 to 15%
				Caving potential
344:				
Coalcanyon very cobbly loam-------	45	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") >50%	0.99	Fragments (>3") >5
				Caving potential
Coonhollow gravelly loam----------	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") >50%	1.00	Fragments (>3") >5
				Caving potential
Rock outcrop, Lovejoy basalt------	15	Not rated		Not rated
346:				
Cherotable loam-------------------	50	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (hard) fro
				Saturation from 2.

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
346:				
Elsey loam	35	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (hard) < 4
		Saturation from 12 to 30" depth	0.90	Saturation < 2.5'
		Fragments (>3") 25 to 50%	0.10	Caving potential
347:				
Haplic Palexeralfs loam	90	Limitations		Limitations
		Frequent or occasional flooding	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.32	Frequent or occasi
				Clay from 40 to 60
353:				
Cherokeespring gravelly silt loam	80	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.68	Slopes 8 to 15%
		Slopes 8 to 15%	0.63	Clay from 40 to 60
355:				
Coalcanyon very cobbly loam	55	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") >50%	0.99	Fragments (>3") >5
				Caving potential
Talus	35	Not rated		Not rated
356:				
Coalcanyon very cobbly loam	45	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") >50%	0.99	Fragments (>3") >5
				Caving potential
Rock outcrop, basalt cliffs	20	Not rated		Not rated
Talus	20	Not rated		Not rated
Coonhollow gravelly loam	10	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") >50%	1.00	Fragments (>3") >5
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
360:				
Typic Xerofluvents, coarse-loamy--	45	Limitations		Limitations
		Rare flooding	0.50	Caving potential
				Saturation from 2.5
Typic Xerofluvents, sandy-skeletal	40	Limitations		Limitations
		Rare flooding	0.50	Caving potential
				Saturation from 2.5
361:				
Typic Xerofluvents, sandy-skeletal	85	Limitations		Limitations
		Rare flooding	0.50	Caving potential
				Saturation from 2.5
362:				
Ultic Haploxeralfs, sandstone, low elevation, very deep----------	60	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.22	Caving potential
		AASHTO GI 5-8 (soil strength)	0.22	
Ultic Haploxeralfs, sandstone, low elevation, deep----------	25	No limitations		Limitations
				Caving potential
363:				
Ultic Haploxeralfs, sandstone, low elevation, very deep----------	60	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.22	Caving potential
		AASHTO GI 5-8 (soil strength)	0.22	
Ultic Haploxeralfs, sandstone, low elevation, deep----------	30	Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes 8 to 15%
				Caving potential
364:				
Ultic Haploxeralfs, sandstone, low elevation, deep----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
364:				
Ultic Haploxeralfs, sandstone, low elevation, very deep----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.22	Caving potential
		AASHTO GI 5-8 (soil strength)	0.22	
365:				
Palexerults gravelly loam---------	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
366:				
Palexerults gravelly loam---------	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
370:				
Palexerults gravelly loam---------	80	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
375:				
Wickscorner loam----------	80	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Caving potential
				Clay from 40 to 60
				Saturation from 2.5
376:				
Flagcanyon gravelly loam----------	50	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.32	Saturation < 2.5'
		Saturation from 12 to 30" depth	0.14	Caving potential
				Pan (thin) from 20
Wickscorner loam----------	35	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Caving potential
				Clay from 40 to 60
				Saturation from 2.5

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow e
		Limitations	Value	Limitat
377:				
Flagcanyon taxadjunct fine sandy loam	55	Limitations		Limitations
		Ponding (any duration)	1.00	Pan (thick) < 40"
		Shrink-swell (LEP >6)	1.00	Ponding (any durat
		Saturation from 12 to 30" depth	0.88	Saturation < 2.5'
Durixeralfs, clayey-skeletal, loam	20	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation < 2.5'
		Saturation < 12" depth	1.00	Caving potential
Duraquerts gravelly clay	15	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Pan (thick) < 40"
		Shrink-swell (LEP >6)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation < 2.5'
400:				
Subaco taxadjunct clay	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
415:				
Ignord fine sandy loam	90	Limitations		Limitations
		Rare flooding	0.50	Caving potential
416:				
Calcic Haploxerolls sandy loam	90	Limitations		Limitations
		Rare flooding	0.50	Saturation < 2.5'
				Caving potential
418:				
Almendra loam	85	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.01	Caving potential
419:				
Conejo fine sandy loam, overwash	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.78	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
420:				
Conejo clay loam	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.50	
425:				
Vina fine sandy loam	85	Limitations		Limitations
		Rare flooding	0.50	Caving potential
426:				
Vina loam	85	No limitations		Limitations
				Caving potential
439:				
Oxyaquic Xerofluvents clay	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Clay > 60%
		Shrink-swell (LEP >6)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Saturation < 2.5' c
440:				
Oxyaquic Xerofluvents silt loam, frequently flooded	80	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durati
		Frequent or occasional flooding	1.00	Caving potential
				Saturation < 2.5' c
441:				
Oxyaquic Xerofluvents very fine sandy loam	90	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durati
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Rare flooding	0.50	Saturation < 2.5' c
442:				
Durixerolls clay loam	55	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durati
		AASHTO GI >8 (low soil strength)	1.00	Saturation < 2.5' c
		Saturation from 12 to 30" depth	0.94	Caving potential
Haploxerolls clay loam	30	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Saturation < 2.5' c
		Rare flooding	0.50	Caving potential
		Shrink-swell (LEP 3-6)	0.01	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
443:				
Durixerolls loam	60	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Saturation < 2.5'
		Saturation from 12 to 30" depth	0.94	Caving potential
		Rare flooding	0.50	
Haploxerolls loam	25	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Saturation < 2.5'
		Rare flooding	0.50	Caving potential
445:				
Chico loam	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.18	
447:				
Charger fine sandy loam	80	Limitations		Limitations
		Rare flooding	0.50	Caving potential
				Saturation from 2.5
448:				
Haploxerolls clay loam	75	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Saturation from 2.5
		Shrink-swell (LEP 3-6)	0.82	Caving potential
		Rare flooding	0.50	
449:				
Haploxerolls loam	75	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Saturation from 2.5
		Rare flooding	0.50	Caving potential
500:				
Lofgren clay	45	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Clay > 60%
		Shrink-swell (LEP >6)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation < 2.5'
Blavo clay	40	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Clay > 60%
		Shrink-swell (LEP >6)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation < 2.5'

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex	
		Limitations	Value	Limitat	
501:					
Lofgren clay, occasionally flooded	45	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Clay > 60%	
		Shrink-swell (LEP >6)	1.00	Ponding (any durati	
		Ponding (any duration)	1.00	Saturation < 2.5' c	
Blavo clay, occasionally flooded	40	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Clay > 60%	
		Shrink-swell (LEP >6)	1.00	Ponding (any durati	
		Ponding (any duration)	1.00	Saturation < 2.5' c	
502:					
Blavo silt loam, overwash, occasionally flooded	80	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Clay > 60%	
		Shrink-swell (LEP >6)	1.00	Ponding (any durati	
		Ponding (any duration)	1.00	Saturation < 2.5' c	
519:					
Edjobe silty clay	85	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durati	
		Shrink-swell (LEP >6)	1.00	Caving potential	
		Ponding (any duration)	1.00	Saturation < 2.5' c	
520:					
Esquon clay	60	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durati	
		Shrink-swell (LEP >6)	1.00	Caving potential	
		Ponding (any duration)	1.00	Saturation < 2.5' c	
Neerdobe clay	30	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durati	
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5' c	
		Ponding (any duration)	1.00	Caving potential	
521:					
Neerdobe silt loam, overwash	85	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durati	
		Shrink-swell (LEP >6)	1.00	Caving potential	
		Ponding (any duration)	1.00	Saturation < 2.5' c	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
522:				
Clear Lake silty clay loam, overwash	80	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
523:				
Esquon silty clay loam, overwash	80	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
525:				
Govstanford loam	85	Limitations		Limitations
		Saturation from 12 to 30" depth	0.12	Saturation < 2.5'
				Clay from 40 to 60
				Caving potential
526:				
Govstanford loam, occasionally flooded	85	Limitations		Limitations
		Frequent or occasional flooding	1.00	Saturation < 2.5'
		Saturation from 12 to 30" depth	0.12	Clay from 40 to 60
				Frequent or occasi
528:				
Neerdobe clay loam	90	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
550:				
Dunstone loam, dry	60	Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
Loafercreek silt loam, dry	20	Limitations		Limitations
		AASHTO GI 5-8 (soil strength)	0.78	Bedrock (soft) fro
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
551:				
Dunstone loam, dry----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (soft) < 2
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
Lomarica loam----------	15	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
				Clay from 40 to 60
Argonaut taxadjunct loam----------	15	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Bedrock (soft) fro
		Slopes > 15%	1.00	Clay from 40 to 60
552:				
Dunstone gravelly loam----------	45	Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (hard) < 4
		Bedrock (hard) from 20 to 40"	0.03	Bedrock (soft) < 2
		Slopes 8 to 15%	0.01	Caving potential
Loafercreek gravelly loam---------	40	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Bedrock (hard) fro
				Bedrock (soft) fro
553:				
Dunstone gravelly loam----------	45	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		Bedrock (hard) from 20 to 40"	0.03	Slopes > 15%
Loafercreek gravelly loam---------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
				Bedrock (hard) fro
554:				
Dunstone gravelly loam----------	45	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		Bedrock (hard) from 20 to 40"	0.03	Slopes > 15%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
554:				
Loafercreek gravelly loam---------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
				Bedrock (hard) fro
555:				
Dunstone gravelly loam----------	45	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		Bedrock (hard) from 20 to 40"	0.03	Slopes > 15%
Loafercreek gravelly loam---------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
				Bedrock (hard) fro
556:				
Mounthope loam---------------------	50	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.06	Caving potential
		Slopes 8 to 15%	0.01	Slopes 8 to 15%
Hartsmill gravelly loam-----------	40	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.78	Fragments (>3") 25
		Fragments (>3") 25 to 50%	0.02	Slopes 8 to 15%
557:				
Mounthope loam---------------------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.06	Caving potential
Hartsmill gravelly loam-----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.78	Fragments (>3") 25
558:				
Hartsmill gravelly loam-----------	55	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.78	Fragments (>3") 25

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow e
		Limitations	Value	Limitat
558:				
Mounthope loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.06	Caving potential
559:				
Hartsmill gravelly loam	55	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.78	Fragments (>3") 25
Mounthope loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.06	Caving potential
560:				
Hartsmill gravelly loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.78	Fragments (>3") 25
Mounthope loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.06	Caving potential
561:				
Bigridge loam	50	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
Minniecreek loam	35	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (soft) fro
		Shrink-swell (LEP 3-6)	0.50	Caving potential
		Slopes 8 to 15%	0.01	Slopes 8 to 15%
562:				
Bigridge loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
562:				
Minniecreek loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (soft) fro
		Shrink-swell (LEP 3-6)	0.50	Caving potential
563:				
Bigridge loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Minniecreek loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (soft) fro
		Shrink-swell (LEP 3-6)	0.50	Caving potential
564:				
Bigridge loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Minniecreek loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (soft) fro
		Shrink-swell (LEP 3-6)	0.50	Caving potential
565:				
Dunstone loam, dry	35	Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
Argonaut taxadjunct loam	30	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (soft) fro
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
		Slopes 8 to 15%	0.01	Caving potential
Sunnyslope loam	20	Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
566:				
Dunstone loam, dry----------	45	Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
Loafercreek silt loam, dry--------	20	Limitations		Limitations
		AASHTO GI 5-8 (soil strength)	0.78	Bedrock (soft) fro
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
Katskillhill loam----------	15	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (hard) fro
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
		Slopes 8 to 15%	0.01	Caving potential
567:				
Dunstone loam, dry----------	40	Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
Loafercreek silt loam, dry--------	25	Limitations		Limitations
		AASHTO GI 5-8 (soil strength)	0.78	Bedrock (soft) fro
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
Argonaut taxadjunct loam----------	20	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (soft) fro
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
		Slopes 8 to 15%	0.01	Caving potential
577:				
Parkshill coarse sandy loam-------	40	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
Flanly loam----------	25	Limitations		Limitations
		Slopes 8 to 15%	0.01	Bedrock (soft) fro
				Caving potential
				Slopes 8 to 15%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow e
		Limitations	Value	Limitat
577:				
Hurleton gravelly sandy loam------	20	Limitations		Limitations
		Bedrock (hard) from 20 to 40"	0.84	Bedrock (hard) < 4
		Slopes 8 to 15%	0.04	Caving potential
				Slopes 8 to 15%
578:				
Flanly loam------------------------	45	Limitations		Limitations
		Slopes 8 to 15%	0.01	Bedrock (soft) fro
				Caving potential
				Slopes 8 to 15%
Swedesflat cobbly fine sandy loam	35	Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		Slopes 8 to 15%	0.16	Slopes 8 to 15%
				Caving potential
580:				
Surnuf taxadjunct loam------------	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Slopes 8 to 15%	0.01	Slopes 8 to 15%
Griffgulch very gravelly silt loam	25	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25
		Fragments (>3") 25 to 50%	0.94	Clay from 40 to 60
Rock outcrop, metavolcanic--------	20	Not rated		Not rated
581:				
Surnuf taxadjunct loam------------	65	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
Griffgulch very gravelly silt loam	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
582:				
Surnuf taxadjunct loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
Griffgulch very gravelly silt loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25
583:				
Surnuf taxadjunct loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
Griffgulch very gravelly silt loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25
584:				
Flanly loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Bedrock (soft) fro
				Caving potential
Swedesflat cobbly fine sandy loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (soft) < 2
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%
				Caving potential
Rackerby very gravelly sandy loam	25	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (soft) < 2
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%
				Caving potential
585:				
Flanly loam----------	45	Limitations		Limitations
		Slopes 8 to 15%	0.01	Bedrock (soft) fro
				Caving potential
				Slopes 8 to 15%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
585:				
Sommeyflat loam	35	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
586:				
Sommeyflat loam	45	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
Mounthope loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.06	Caving potential
587:				
Sommeyflat loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
Mounthope loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.06	Caving potential
Hurleton gravelly sandy loam	25	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (hard) from 20 to 40"	0.84	Slopes > 15%
				Caving potential
588:				
Ultic Haploxeralfs, thermic, high terrace	95	Limitations		Limitations
		Saturation from 12 to 30" depth	0.56	Saturation < 2.5'
				Caving potential
589:				
Ultic Haploxeralfs, thermic, high terrace	95	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Saturation from 12 to 30" depth	0.56	Saturation < 2.5'
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
590:				
Vistarobles sandy loam----------	30	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Saturation < 2.5'
		Saturation < 12" depth	1.00	Caving potential
Redding loam----------	25	Limitations		Limitations
		AASHTO GI 5-8 (soil strength)	0.22	Saturation < 2.5'
		Saturation from 12 to 30" depth	0.19	Clay from 40 to 60
				Caving potential
Argonaut taxadjunct loam----------	20	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (soft) fro
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
				Caving potential
Haploxererts gravelly silty clay--	15	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durati
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
603:				
Oroville gravelly fine sandy loam	30	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durati
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Saturation < 12" depth	0.99	Caving potential
Thermalito sandy loam----------	25	Limitations		Limitations
		Saturation from 12 to 30" depth	0.96	Saturation < 2.5'
		Shrink-swell (LEP 3-6)	0.06	Caving potential
				Clay from 40 to 60
Fernandez sandy loam----------	15	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	1.00	Saturation from 2.5
				Clay from 40 to 60
Thompsonflat fine sandy loam------	15	No limitations		Limitations
				Caving potential
				Saturation from 2.5
				Clay from 40 to 60

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
605:				
Duric Xerarents fine sandy loam, leveled	75	Limitations		Limitations
		Thin pan <= 20"	1.00	Pan (thin) < 20" de
		Ponding (any duration)	1.00	Ponding (any durat
		Saturation < 12" depth	1.00	Saturation < 2.5'
Oroville gravelly fine sandy loam	20	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Saturation < 12" depth	0.99	Caving potential
606:				
Redtough loam	45	Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 2.5'
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.01	
Fallager loam	30	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation < 2.5'
		Saturation < 12" depth	1.00	Caving potential
Anita, gravelly duripan	15	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Pan (thin) < 20" de
		Thin pan <= 20"	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
609:				
Anita, gravelly duripan	50	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Pan (thin) < 20" de
		Thin pan <= 20"	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
Tuscan taxadjunct gravelly clay loam	40	Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 2.5'
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
614:				
Doemill gravelly loam----------	50	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Saturation < 12" depth	1.00	Saturation < 2.5'
				Caving potential
Jokerst very cobbly loam----------	40	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Ponding (any duration)	1.00	Ponding (any durat
		Saturation < 12" depth	1.00	Saturation < 2.5'
615:				
Doemill gravelly loam----------	50	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Saturation < 12" depth	1.00	Saturation < 2.5'
				Caving potential
Jokerst very cobbly loam----------	40	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Ponding (any duration)	1.00	Ponding (any durat
		Saturation < 12" depth	1.00	Saturation < 2.5'
616:				
Jokerst very cobbly loam----------	35	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Saturation < 12" depth	1.00	Saturation < 2.5'
		Slopes 8 to 15%	0.16	Slopes 8 to 15%
Doemill gravelly loam----------	35	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Saturation < 12" depth	0.99	Saturation < 2.5'
		Slopes 8 to 15%	0.16	Slopes 8 to 15%
Typic Haploxeralfs gravelly loam--	15	Limitations		Limitations
		Slopes 8 to 15%	0.84	Caving potential
		Shrink-swell (LEP 3-6)	0.78	Slopes 8 to 15%
617:				
Doemill gravelly loam----------	35	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Saturation from 12 to 30" depth	0.98	Saturation < 2.5'

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
617:				
Jokerst very cobbly loam----------	30	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Saturation < 12" depth	1.00	Slopes > 15%
		Slopes > 15%	1.00	Saturation < 2.5'
Typic Haploxeralfs gravelly loam--	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.78	Caving potential
619:				
Carhart taxadjunct clay----------	90	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (hard) < 4
		Bedrock (hard) < 20" depth	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
620:				
Doemill gravelly loam----------	40	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Saturation < 12" depth	1.00	Saturation < 2.5'
				Caving potential
Jokerst very cobbly loam----------	25	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Ponding (any duration)	1.00	Ponding (any durat
		Saturation < 12" depth	1.00	Saturation < 2.5'
Ultic Haploxeralfs, thermic, gravelly loam----------	20	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (hard) < 4
		Fragments (>3") >50%	1.00	Saturation < 2.5'
		Shrink-swell (LEP 3-6)	0.78	Fragments (>3") >5
621:				
Doemill gravelly loam----------	30	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Saturation < 12" depth	0.99	Saturation < 2.5'
		Slopes 8 to 15%	0.16	Slopes 8 to 15%
Jokerst very cobbly loam----------	30	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Saturation < 12" depth	1.00	Saturation < 2.5'
		Slopes 8 to 15%	0.16	Slopes 8 to 15%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
621:				
Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (hard) < 4
		Fragments (>3") >50%	1.00	Fragments (>3") >5
		Shrink-swell (LEP 3-6)	0.78	Saturation < 2.5'
622:				
Xerorthents, shallow	40	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Bedrock (soft) < 2
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%
Typic Haploxeralfs gravelly loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.78	Caving potential
				Bedrock (hard) < 4
Rock outcrop, mudflow-breccia cliffs	15	Not rated		Not rated
623:				
Xerorthents, shallow	40	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Bedrock (soft) < 2
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%
Typic Haploxeralfs gravelly loam	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.78	Caving potential
				Bedrock (hard) < 4
Rock outcrop, mudflow-breccia cliffs	20	Not rated		Not rated
624:				
Ultic Haploxeralfs, mesic, gravelly loam	60	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Fragments (>3") >5
		Fragments (>3") >50%	0.99	Bedrock (hard) fro
		Shrink-swell (LEP 3-6)	0.50	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
624:				
Rockstripe very gravelly loam-----	25	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		AASHTO GI 5-8 (soil strength)	0.22	Caving potential
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 25
625:				
Ultic Haploxeralfs, mesic, gravelly loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Fragments (>3") >5
		Fragments (>3") >50%	0.99	Bedrock (hard) fro
Rockstripe very gravelly loam-----	35	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI 5-8 (soil strength)	0.22	Caving potential
626:				
Ultic Haploxeralfs gravelly loam--	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Bedrock (hard) fro
Rockstripe very gravelly loam-----	35	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI 5-8 (soil strength)	0.22	Caving potential
Rock outcrop, mudflow-breccia cliffs----------	15	Not rated		Not rated
627:				
Ultic Haploxeralfs gravelly loam--	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Bedrock (hard) fro
Rockstripe very gravelly loam-----	35	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI 5-8 (soil strength)	0.22	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
627:				
Rock outcrop, mudflow-breccia cliffs	15	Not rated		Not rated
628:				
Rockstripe very gravelly loam	40	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI 5-8 (soil strength)	0.22	Caving potential
Ultic Haploxeralfs gravelly loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Bedrock (hard) fro
Rock outcrop, mudflow-breccia cliffs	20	Not rated		Not rated
629:				
Slideland gravelly loam	80	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Slopes 8 to 15%
		Slopes 8 to 15%	0.37	
630:				
Slideland gravelly loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	
631:				
Slideland gravelly loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	
632:				
Ultic Haploxeralfs, conglomerate, very deep	50	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Slopes 8 to 15%
		Slopes 8 to 15%	0.84	Clay from 40 to 60

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
632:				
Ultic Haploxeralfs, conglomerate, moderately deep	40	Limitations		Limitations
		Fragments (>3") 25 to 50%	0.32	Caving potential
		Shrink-swell (LEP 3-6)	0.22	Bedrock (soft) fro
				Fragments (>3") 25
633:				
Ultic Haploxeralfs, conglomerate, very deep	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Clay from 40 to 60
Ultic Haploxeralfs, conglomerate, moderately deep	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.32	Caving potential
		Shrink-swell (LEP 3-6)	0.22	Bedrock (soft) fro
634:				
Ultic Haploxeralfs, conglomerate, very deep	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Clay from 40 to 60
Ultic Haploxeralfs, conglomerate, moderately deep	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.32	Caving potential
		Shrink-swell (LEP 3-6)	0.22	Bedrock (soft) fro
635:				
Ultic Haploxeralfs, conglomerate, very deep	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Clay from 40 to 60

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
635:				
Ultic Haploxeralfs, conglomerate, moderately deep	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.32	Caving potential
		Shrink-swell (LEP 3-6)	0.22	Bedrock (soft) fro
636:				
Ultic Haploxeralfs, conglomerate, moderately deep	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.32	Caving potential
		Shrink-swell (LEP 3-6)	0.22	Bedrock (soft) fro
Ultic Haploxeralfs, conglomerate, very deep	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Clay from 40 to 60
637:				
Ultic Haploxeralfs, sandstone	80	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
638:				
Ultic Haploxeralfs, sandstone	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
639:				
Ultic Haploxeralfs, sandstone	75	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
640:				
Ultic Haploxeralfs, sandstone	75	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
641:				
Ultic Haploxeralfs, sandstone-----	75	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
642:				
Chinacamp gravelly loam-----------	70	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	
643:				
Chinacamp gravelly loam-----------	70	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	
644:				
Chinacamp gravelly loam-----------	70	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	
645:				
Chinacamp gravelly loam-----------	70	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	
646:				
Coalcanyon taxadjunct very gravelly loam---------------------	80	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.78	Caving potential
		Fragments (>3") 25 to 50%	0.30	Fragments (>3") 25
				Clay from 40 to 60
647:				
Coalcanyon taxadjunct very gravelly loam---------------------	75	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.78	Caving potential
		Fragments (>3") 25 to 50%	0.30	Fragments (>3") 25

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow e
		Limitations	Value	Limitat
648:				
Coalcanyon taxadjunct very gravelly loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.78	Caving potential
		Fragments (>3") 25 to 50%	0.30	Fragments (>3") 25
649:				
Coalcanyon taxadjunct very gravelly loam	75	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.78	Caving potential
		Fragments (>3") 25 to 50%	0.30	Fragments (>3") 25
650:				
Schott very gravelly loam	65	Limitations		Limitations
		Fragments (>3") 25 to 50%	0.97	Caving potential
		Shrink-swell (LEP 3-6)	0.78	Fragments (>3") 25
				Bedrock (hard) fro
651:				
Schott very gravelly loam	65	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.97	Caving potential
		Shrink-swell (LEP 3-6)	0.78	Fragments (>3") 25
652:				
Schott very gravelly loam	65	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.97	Caving potential
		Shrink-swell (LEP 3-6)	0.78	Fragments (>3") 25
Rock outcrop, mudflow breccia	20	Not rated		Not rated
654:				
Coridge bouldery loam	70	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (hard) < 4
		Shrink-swell (LEP >6)	0.99	Saturation < 2.5'
		Bedrock (hard) from 20 to 40"	0.90	Caving potential
Rock outcrop, Cohasset basalt	20	Not rated		Not rated

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
655:				
Coridge bouldery loam----------	70	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (hard) < 4
		Shrink-swell (LEP >6)	0.99	Saturation < 2.5'
		Bedrock (hard) from 20 to 40"	0.90	Caving potential
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated
656:				
Rock outcrop, basalt cliffs-------	40	Not rated		Not rated
Coalcanyon taxadjunct very gravelly loam----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.78	Caving potential
		Fragments (>3") 25 to 50%	0.30	Fragments (>3") 25
657:				
Bonneyridge sandy loam----------	35	No limitations		Limitations
				Caving potential
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
				Caving potential
Rock outcrop, quartz diorite------	20	Not rated		Not rated
658:				
Bonneyridge sandy loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (soft) < 2
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%
				Caving potential
Rock outcrop, quartz diorite------	25	Not rated		Not rated
659:				
Bonneyridge sandy loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
659:				
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (soft) < 2
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%
				Caving potential
Rock outcrop, quartz diorite------	25	Not rated		Not rated
660:				
Bonneyridge sandy loam----------	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (soft) < 2
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%
				Caving potential
Rock outcrop, quartz diorite------	30	Not rated		Not rated
661:				
Millerridge gravelly sandy clay loam----------	45	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Bedrock (soft) fro
Boxrobber cobbly sandy clay loam--	40	Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (hard) < 4
		Shrink-swell (LEP >6)	0.99	Bedrock (soft) < 2
		Bedrock (hard) from 20 to 40"	0.46	Caving potential
662:				
Millerridge gravelly sandy clay loam----------	45	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Bedrock (soft) fro
Boxrobber cobbly sandy clay loam--	40	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		Shrink-swell (LEP >6)	0.99	Slopes > 15%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
663:				
Millerridge gravelly sandy clay loam	45	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Bedrock (soft) fro
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		Shrink-swell (LEP >6)	0.99	Slopes > 15%
664:				
Millerridge gravelly sandy clay loam	45	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Bedrock (soft) fro
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		Shrink-swell (LEP >6)	0.99	Slopes > 15%
665:				
Surnuf gravelly loam	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
		Slopes 8 to 15%	0.01	Slopes 8 to 15%
Bigridge loam	40	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
666:				
Surnuf gravelly loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
Bigridge loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
667:				
Surnuf gravelly loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
Bigridge loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
668:				
Surnuf gravelly loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
Bigridge loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
669:				
Oroshore gravelly loam	35	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Bedrock (soft) fro
		Fragments (>3") 25 to 50%	0.03	Fragments (>3") 25
Mounthope loam	25	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.06	Caving potential
		Slopes 8 to 15%	0.01	Slopes 8 to 15%
Dunstone gravelly loam	20	Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (hard) < 4
		Bedrock (hard) from 20 to 40"	0.03	Bedrock (soft) < 2
		Slopes 8 to 15%	0.01	Caving potential
670:				
Oroshore gravelly loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Bedrock (soft) fro
Mounthope loam	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.06	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
670:				
Dunstone gravelly loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		Bedrock (hard) from 20 to 40"	0.03	Slopes > 15%
671:				
Oroshore gravelly loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Bedrock (soft) fro
Mounthope loam----------	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.06	Caving potential
Dunstone gravelly loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		Bedrock (hard) from 20 to 40"	0.03	Slopes > 15%
672:				
Oroshore gravelly loam----------	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Bedrock (soft) fro
Mounthope loam----------	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.06	Caving potential
Dunstone gravelly loam----------	25	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		Bedrock (hard) from 20 to 40"	0.03	Slopes > 15%
674:				
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (soft) < 2
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
674:				
Bonneyridge sandy loam----------	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Rock outcrop, quartz diorite------	30	Not rated		Not rated
675:				
Clearhayes sandy clay loam--------	70	Limitations		Limitations
		Frequent or occasional flooding	1.00	Saturation < 2.5'
		Saturation from 12 to 30" depth	0.68	Caving potential
		Fragments (>3") 25 to 50%	0.01	Frequent or occasi
Hamslough clay----------	15	Limitations		Limitations
		Ponding (any duration)	1.00	Pan (thick) < 40"
		Saturation < 12" depth	1.00	Ponding (any durat
		Frequent or occasional flooding	1.00	Saturation < 2.5'
676:				
Carhart clay----------	50	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'
		Ponding (any duration)	1.00	Caving potential
Anita taxadjunct clay----------	40	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (soft) < 2
		Shrink-swell (LEP >6)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation < 2.5'
677:				
Tuscan gravelly loam----------	40	Limitations		Limitations
		Pan (thick) < 20" depth	1.00	Pan (thick) < 40"
		Saturation < 12" depth	1.00	Saturation < 2.5'
		Shrink-swell (LEP >6)	1.00	Caving potential
Fallager loam----------	25	Limitations		Limitations
		Pan (thick) < 20" depth	1.00	Pan (thick) < 40"
		Shrink-swell (LEP >6)	1.00	Ponding (any durat
		Ponding (any duration)	1.00	Saturation < 2.5'

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex	
		Limitations	Value	Limitat	
677:					
Anita, gravelly duripan	15	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Pan (thick) < 40"	
		Pan (thick) < 20" depth	1.00	Ponding (any durat	
		Shrink-swell (LEP >6)	1.00	Saturation < 2.5'	
679:					
Lucksev loam	40	Limitations		Limitations	
		Saturation < 12" depth	1.00	Bedrock (soft) < 2	
		Bedrock (soft) < 20" depth	1.00	Saturation < 2.5'	
		Shrink-swell (LEP >6)	1.00	Caving potential	
Butteside gravelly loam	35	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Bedrock (soft) fro	
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60	
				Caving potential	
Carhart clay	15	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Saturation < 2.5'	
		Shrink-swell (LEP >6)	1.00	Caving potential	
		Saturation from 12 to 30" depth	0.90	Clay from 40 to 60	
680:					
Lucksev loam	45	Limitations		Limitations	
		Slopes > 15%	1.00	Bedrock (soft) < 2	
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	
		Shrink-swell (LEP >6)	1.00	Caving potential	
Butteside gravelly loam	40	Limitations		Limitations	
		Shrink-swell (LEP >6)	1.00	Slopes > 15%	
		Slopes > 15%	1.00	Bedrock (soft) fro	
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60	
683:					
Typic Haploxeralfs, magnesic, low elevation	50	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Bedrock (hard) < 4	
		Shrink-swell (LEP >6)	0.99	Caving potential	
		Bedrock (hard) from 20 to 40"	0.46	Fragments (>3") 25	
Earlal very gravelly loam	20	Limitations		Limitations	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4	
		Shrink-swell (LEP >6)	1.00	Fragments (>3") 25	
		Fragments (>3") 25 to 50%	0.44	Slopes 8 to 15%	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
683:				
Rock outcrop, serpentinite--------	15	Not rated		Not rated
684:				
Typic Haploxeralfs, magnesic, low elevation----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		AASHTO GI >8 (low soil strength)	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	0.99	Caving potential
Earlal very gravelly loam---------	20	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Fragments (>3") 25
Rock outcrop, serpentinite--------	15	Not rated		Not rated
685:				
Bosquejo taxadjunct, gravelly substratum----------	70	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Ponding (any durat
		Shrink-swell (LEP >6)	1.00	Caving potential
		Ponding (any duration)	1.00	Clay > 60%
686:				
Redsluff taxadjunct clay loam-----	70	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Saturation from 2.5
		Rare flooding	0.50	
687:				
Xerorthents, shallow----------	45	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
Typic Haploxeralfs gravelly loam--	40	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.78	Caving potential
		Slopes 8 to 15%	0.63	Bedrock (hard) < 4
				Slopes 8 to 15%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
700:				
Retsongulch very gravelly sandy loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Fragments (>3") 25 to 50%	0.55	Slopes > 15%
		Bedrock (hard) from 20 to 40"	0.46	Caving potential
Flumewall gravelly sandy loam	25	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.82	Fragments (>3") 25
701:				
Powellton gravelly loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.01	
Obstruction gravelly sandy loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
702:				
Cerpone gravelly loam	50	Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Caving potential
		Slopes 8 to 15%	0.37	Slopes 8 to 15%
		AASHTO GI 5-8 (soil strength)	0.22	Bedrock (hard) fro
Typic Haploxeralfs, magnesic, very gravelly loam	20	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI 5-8 (soil strength)	0.22	Clay from 40 to 60
		Slopes 8 to 15%	0.16	Slopes 8 to 15%
Earlal very gravelly loam	15	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Shrink-swell (LEP >6)	1.00	Fragments (>3") 25
		Fragments (>3") 25 to 50%	0.44	Slopes 8 to 15%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
703:				
Cerpone gravelly loam----------	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	0.99	Caving potential
		AASHTO GI 5-8 (soil strength)	0.22	Bedrock (hard) fro
Typic Haploxeralfs, magnesic, very gravelly loam----------	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI 5-8 (soil strength)	0.22	Clay from 40 to 60
Earlal very gravelly loam---------	15	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Fragments (>3") 25
Rock outcrop, serpentinite--------	15	Not rated		Not rated
704:				
Typic Haploxeralfs, magnesic, very gravelly loam----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI 5-8 (soil strength)	0.22	Clay from 40 to 60
Earlal gravelly loam----------	20	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Fragments (>3") 25
Cerpone gravelly loam----------	15	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	0.99	Caving potential
		AASHTO GI 5-8 (soil strength)	0.22	Bedrock (hard) fro
Rock outcrop, serpentinite--------	15	Not rated		Not rated

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
705:				
Typic Haploxeralfs, magnesic, very gravelly loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI 5-8 (soil strength)	0.22	Clay from 40 to 60
Earlal very gravelly loam	25	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Fragments (>3") 25
Cerpone gravelly loam	15	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	0.99	Caving potential
		AASHTO GI 5-8 (soil strength)	0.22	Bedrock (hard) fro
Rock outcrop, serpentinite	15	Not rated		Not rated
711:				
Dixmine very gravelly loam	45	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25
		Fragments (>3") 25 to 50%	0.01	Slopes 8 to 15%
Toadtown loam	40	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.50	Clay from 40 to 60
		Slopes 8 to 15%	0.01	Slopes 8 to 15%
712:				
Dixmine very gravelly loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25
Toadtown loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.50	Clay from 40 to 60

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
713:				
Dixmine very gravelly loam--------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25
Toadtown loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.50	Clay from 40 to 60
714:				
Dixmine very gravelly loam--------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25
Toadtown loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.50	Clay from 40 to 60
715:				
Logtrain gravelly loam----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) fro
Bottlehill very gravelly loam-----	30	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Shrink-swell (LEP 3-6)	0.50	Slopes > 15%
		Bedrock (hard) from 20 to 40"	0.29	Caving potential
Walkermine very gravelly loam-----	20	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.01	Caving potential
716:				
Griffgulch very gravelly silt loam	40	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25
		Fragments (>3") 25 to 50%	0.94	Clay from 40 to 60

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
716:				
Surnuf gravelly loam	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
		Slopes 8 to 15%	0.01	Slopes 8 to 15%
717:				
Griffgulch very gravelly silt loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25
Surnuf gravelly loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
718:				
Griffgulch very gravelly silt loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25
Surnuf gravelly loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
Spine taxadjunct very cobbly loam	15	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Fragments (>3") 25
719:				
Griffgulch very gravelly silt loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25
Surnuf gravelly loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
719:				
Spine taxadjunct very cobbly loam	20	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Fragments (>3") 25
720:				
Dystroxerepts extremely gravelly loam----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Fragments (>3") 25 to 50%	0.90	Slopes > 15%
		Bedrock (hard) from 20 to 40"	0.01	Caving potential
Haploxeralfs very gravelly loam---	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	0.99	Caving potential
		Fragments (>3") 25 to 50%	0.99	Fragments (>3") 25
Rock outcrop, metavolcanic--------	15	Not rated		Not rated
721:				
Haploxerands, granitic till, medial sandy loam----------	70	Limitations		Limitations
		Slopes 8 to 15%	0.96	Caving potential
				Slopes 8 to 15%
722:				
Haploxerands, granitic till, medial sandy loam----------	70	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
723:				
Haploxerands, granitic till, medial sandy loam----------	70	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
724:				
Haploxerands, volcanic till, cobbly medial sandy loam---------	75	Limitations		Limitations
		Slopes 8 to 15%	0.16	Caving potential
				Slopes 8 to 15%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
725:				
Haploxerands, volcanic till, cobbly medial sandy loam---------	75	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
726:				
Haploxerands, volcanic till, cobbly medial sandy loam---------	75	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
727:				
Bonneyridge sandy loam----------	85	No limitations		Limitations
				Caving potential
728:				
Bonneyridge sandy loam----------	85	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
729:				
Bonneyridge sandy loam----------	85	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
730:				
Tusccoll gravelly loam----------	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.22	
Schott very gravelly loam---------	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.97	Caving potential
		Shrink-swell (LEP 3-6)	0.78	Fragments (>3") 25
731:				
Tusccoll gravelly loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.22	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
731:				
Schott very gravelly loam---------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.97	Caving potential
		Shrink-swell (LEP 3-6)	0.78	Fragments (>3") 25
732:				
Bonepile taxadjunct, duripan substratum----------	90	Limitations		Limitations
		Fragments (>3") 25 to 50%	0.07	Caving potential
				Saturation from 2.5
				Fragments (>3") 25
733:				
Haploxeralfs, terrace, gravelly loam----------	75	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Fragments (>3") 25
		Shrink-swell (LEP >6)	0.99	Caving potential
		Fragments (>3") 25 to 50%	0.99	
734:				
Haploxerands medial sandy loam----	55	Limitations		Limitations
		Frost action very likely	1.00	Caving potential
		Slopes > 15%	1.00	Slopes > 15%
Aquic Xerofluvents peaty very fine sandy loam----------	35	Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 2.5'
		Frost action very likely	1.00	Caving potential
		Frequent or occasional flooding	1.00	Organic matter (PT
				20"
735:				
Fluvaquents, loamy----------	80	Limitations		Limitations
		Saturation < 12" depth	1.00	Saturation < 2.5'
		Rare flooding	0.50	Caving potential
		AASHTO GI 5-8 (soil strength)	0.22	
801:				
Obstruction gravelly sandy loam---	70	Limitations		Limitations
		Slopes 8 to 15%	0.16	Caving potential
				Slopes 8 to 15%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
802:				
Obskel very gravelly sandy loam---	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Obstruction gravelly sandy loam---	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
803:				
Obskel very gravelly sandy loam---	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Obstruction gravelly sandy loam---	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
804:				
Obskel very gravelly sandy loam---	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Obstruction gravelly sandy loam---	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Retsongulch very gravelly sandy loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Fragments (>3") 25 to 50%	0.55	Slopes > 15%
		Bedrock (hard) from 20 to 40"	0.46	Caving potential
805:				
Bottlehill very gravelly loam-----	50	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 4
		Bedrock (hard) from 20 to 40"	0.29	Caving potential
Walkermine very gravelly loam-----	20	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes 8 to 15%	0.84	Slopes 8 to 15%
		Fragments (>3") 25 to 50%	0.01	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
805:				
Logtrain gravelly loam----------	20	Limitations		Limitations
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) fro
806:				
Bottlehill very gravelly loam-----	50	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Shrink-swell (LEP 3-6)	0.50	Slopes > 15%
		Bedrock (hard) from 20 to 40"	0.29	Caving potential
Walkermine very gravelly loam-----	20	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.01	Caving potential
Logtrain gravelly loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) fro
807:				
Bottlehill very gravelly loam-----	35	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Shrink-swell (LEP 3-6)	0.50	Slopes > 15%
		Bedrock (hard) from 20 to 40"	0.29	Caving potential
Logtrain gravelly loam----------	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) fro
Walkermine very gravelly loam-----	25	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.01	Caving potential
808:				
Bottlehill very gravelly loam-----	45	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Shrink-swell (LEP 3-6)	0.50	Slopes > 15%
		Bedrock (hard) from 20 to 40"	0.29	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
808:				
Walkermine very gravelly loam-----	20	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.01	Caving potential
Logtrain gravelly loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) fro
809:				
Walkermine very gravelly loam-----	45	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.01	Caving potential
Bottlehill very gravelly loam-----	15	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Shrink-swell (LEP 3-6)	0.50	Slopes > 15%
		Bedrock (hard) from 20 to 40"	0.29	Caving potential
Logtrain gravelly loam----------	15	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential
		Shrink-swell (LEP 3-6)	0.01	Bedrock (hard) fro
Rock outcrop, metavolcanic--------	15	Not rated		Not rated
810:				
Dixmine very gravelly loam--------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25
Mac gravelly loam-----------------	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.22	Caving potential
				Bedrock (soft) fro
Spine very gravelly loam----------	25	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.22	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
811:				
Powellton gravelly loam----------	50	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Slopes > 15%
		Slopes > 15%	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.01	
Toadtown loam----------	40	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.50	Clay from 40 to 60
812:				
Powellton gravelly loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.01	
Toadtown loam----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.50	Clay from 40 to 60
813:				
Powellton gravelly loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.01	
Toadtown loam----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.50	Clay from 40 to 60
814:				
Mountyana gravelly loam----------	80	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.78	Slopes 8 to 15%
		Slopes 8 to 15%	0.16	
815:				
Mountyana gravelly loam----------	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.78	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
817:				
Lydon very gravelly medial coarse sandy loam	80	Limitations		Limitations
		Bedrock (hard) from 20 to 40"	0.11	Bedrock (hard) < 4
		Fragments (>3") 25 to 50%	0.02	Caving potential
				Fragments (>3") 25
818:				
Lydon very gravelly medial coarse sandy loam	75	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (hard) from 20 to 40"	0.11	Slopes > 15%
		Fragments (>3") 25 to 50%	0.02	Caving potential
819:				
Lydon very gravelly medial coarse sandy loam	65	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (hard) from 20 to 40"	0.11	Slopes > 15%
		Fragments (>3") 25 to 50%	0.02	Caving potential
Rock outcrop, mudflow breccia	20	Not rated		Not rated
820:				
Lydon very gravelly medial coarse sandy loam	60	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (hard) from 20 to 40"	0.11	Slopes > 15%
		Fragments (>3") 25 to 50%	0.02	Caving potential
Rock outcrop, mudflow breccia	25	Not rated		Not rated
821:				
Lydon very gravelly medial coarse sandy loam	55	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (hard) from 20 to 40"	0.11	Slopes > 15%
		Fragments (>3") 25 to 50%	0.02	Caving potential
Rock outcrop, mudflow breccia	30	Not rated		Not rated
822:				
Bonepile gravelly medial loam	85	No limitations		Limitations
				Caving potential
823:				
Bonepile gravelly medial loam	85	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
824:				
Beecee very gravelly medial loam--	85	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
825:				
Beecee very gravelly medial loam--	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Lydon very gravelly medial coarse sandy loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (hard) from 20 to 40"	0.11	Slopes > 15%
		Fragments (>3") 25 to 50%	0.02	Caving potential
826:				
Redbone gravelly medial sandy loam	80	Limitations		Limitations
		Slopes 8 to 15%	0.16	Caving potential
				Slopes 8 to 15%
827:				
Redbone gravelly medial sandy loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
829:				
Paradiso loam----------	80	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
		Shrink-swell (LEP >6)	1.00	Caving potential
830:				
Paradiso loam----------	75	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Slopes > 15%
		Slopes > 15%	1.00	Clay from 40 to 60
		Shrink-swell (LEP >6)	1.00	Caving potential
831:				
Surnuf gravelly loam----------	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
		Slopes 8 to 15%	0.01	Slopes 8 to 15%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
831:				
Bigridge loam	30	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
Spine very gravelly loam	15	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Shrink-swell (LEP 3-6)	0.22	Caving potential
		Slopes 8 to 15%	0.04	Slopes 8 to 15%
832:				
Surnuf gravelly loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
Bigridge loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Spine very gravelly loam	15	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.22	Caving potential
833:				
Surnuf gravelly loam	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
Bigridge loam	15	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Spine very gravelly loam	15	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.22	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow e
		Limitations	Value	Limitat
834:				
Hietanen gravelly loam----------	50	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.01	
Mac gravelly loam----------	30	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.22	Caving potential
				Bedrock (soft) fro
835:				
Hietanen gravelly loam----------	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.01	
Mac gravelly loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.22	Caving potential
				Bedrock (soft) fro
836:				
Hietanen gravelly loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.01	
Mac gravelly loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.22	Caving potential
				Bedrock (soft) fro
Spine very gravelly loam----------	15	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.22	Caving potential
837:				
Hietanen gravelly loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.01	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
837:				
Spine very gravelly loam----------	25	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.22	Caving potential
Mac gravelly loam-----------------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.22	Caving potential
				Bedrock (soft) fro
838:				
Dixmine very gravelly loam--------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	0.99	Fragments (>3") 25
Spine very gravelly loam----------	25	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.22	Caving potential
Mac gravelly loam-----------------	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP 3-6)	0.22	Caving potential
				Bedrock (soft) fro
839:				
Chawanakee gravelly sandy loam----	55	Limitations		Limitations
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 2
		Slopes 8 to 15%	0.16	Slopes 8 to 15%
				Caving potential
Billscabin gravelly sandy loam----	35	Limitations		Limitations
		Slopes 8 to 15%	0.16	Caving potential
				Slopes 8 to 15%
841:				
Billscabin gravelly sandy loam----	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
841:				
Bonneyridge sandy loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
842:				
Billscabin gravelly sandy loam----	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Bonneyridge sandy loam----------	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
846:				
Bonneyridge sandy loam----------	60	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
Lewisflat loam----------	20	Limitations		Limitations
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential
		Slopes 8 to 15%	0.01	Slopes 8 to 15%
847:				
Bonneyridge sandy loam----------	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Lewisflat loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential
848:				
Bonneyridge sandy loam----------	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Lewisflat loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
850:				
Lewisflat loam	85	Limitations		Limitations
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential
851:				
Lewisflat loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential
852:				
Lewisflat loam	75	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential
860:				
Toadtown gravelly loam	60	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
		Shrink-swell (LEP >6)	1.00	Caving potential
		Slopes 8 to 15%	0.01	Slopes 8 to 15%
Powellton silt loam	20	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.78	Slopes 8 to 15%
		Slopes 8 to 15%	0.01	
861:				
Toadtown gravelly loam	60	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
		Slopes > 15%	1.00	Caving potential
Powellton silt loam	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.78	
862:				
Toadtown gravelly loam	60	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
		Slopes > 15%	1.00	Caving potential

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
862:				
Powellton silt loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.78	
863:				
Toadtown gravelly loam----------	60	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60
		Slopes > 15%	1.00	Caving potential
Powellton silt loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP 3-6)	0.78	
880:				
Sites taxadjunct gravelly loam----	50	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
		Slopes 8 to 15%	0.01	Slopes 8 to 15%
Jocal taxadjunct gravelly loam----	35	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
881:				
Sites taxadjunct gravelly loam----	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
Jocal taxadjunct gravelly loam----	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
882:				
Sites taxadjunct gravelly loam----	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
882:				
Jocal taxadjunct gravelly loam----	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
883:				
Sites taxadjunct gravelly loam----	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Clay from 40 to 60
Jocal taxadjunct gravelly loam----	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
885:				
Rogerville silt loam----------	75	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	Slopes 8 to 15%
		Slopes 8 to 15%	0.01	
886:				
Rogerville silt loam----------	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	
892:				
Rogerville silt loam----------	85	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	
893:				
Rogerville silt loam----------	85	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		AASHTO GI >8 (low soil strength)	1.00	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
902:				
Lava flows, Lovejoy basalt--------	50	Not rated		Not rated
Lumpkin gravelly medial sandy loam	40	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Fragments (>3") >50%	1.00	Fragments (>3") >5
				Caving potential
903:				
Mudwash gravelly medial sandy loam	45	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
Timberisland very gravelly medial sandy loam----------	25	Limitations		Limitations
		Slopes > 15%	1.00	Caving potential
		Fragments (>3") 25 to 50%	0.05	Slopes > 15%
				Bedrock (hard) fro
Lavatop gravelly medial fine sandy loam----------	20	Limitations		Limitations
		Bedrock (hard) from 20 to 40"	0.82	Bedrock (hard) < 4
		Fragments (>3") 25 to 50%	0.01	Caving potential
		Slopes 8 to 15%	0.01	Fragments (>3") 25
904:				
Lava flows, Lovejoy basalt--------	60	Not rated		Not rated
Lavatop gravelly medial fine sandy loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Bedrock (hard) < 4
		Bedrock (hard) from 20 to 40"	0.82	Slopes > 15%
		Fragments (>3") 25 to 50%	0.01	Caving potential
905:				
Lava flows, Lovejoy basalt--------	60	Not rated		Not rated
Lumpkin gravelly medial sandy loam----------	30	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") >50%	1.00	Fragments (>3") >5

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
906:				
Lava flows, Lovejoy basalt--------	60	Not rated		Not rated
Lumpkin gravelly medial sandy loam	30	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") >50%	1.00	Fragments (>3") >5
911:				
Endoaquolls loam------------------	75	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Saturation < 2.5'
		Saturation < 12" depth	1.00	Frequent or occasi
		Frequent or occasional flooding	1.00	Caving potential
923:				
Powderhouse medial sandy loam-----	45	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Bedrock (soft) fro
				Slopes 8 to 15%
McNair medial coarse sandy loam---	25	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
Greenwell medial sandy loam-------	20	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Bedrock (soft) fro
				Slopes 8 to 15%
924:				
Powderhouse medial sandy loam-----	45	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
				Bedrock (soft) fro
McNair medial coarse sandy loam---	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Greenwell medial sandy loam-------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
				Bedrock (soft) fro

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow e
		Limitations	Value	Limitat
925:				
Powderhouse medial sandy loam-----	45	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
				Bedrock (soft) fro
McNair medial coarse sandy loam---	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Greenwell medial sandy loam-------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
				Bedrock (soft) fro
930:				
Shakeridge gravelly medial coarse sandy loam-----------------------	50	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
Timberisland very gravelly medial sandy loam-----------------------	40	Limitations		Limitations
		Fragments (>3") 25 to 50%	0.05	Caving potential
		Slopes 8 to 15%	0.01	Bedrock (hard) fro
				Fragments (>3") 25
931:				
Shakeridge gravelly medial coarse sandy loam-----------------------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Mudwash gravelly medial sandy loam-----------------------------	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Timberisland very gravelly medial sandy loam-----------------------	15	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.05	Caving potential
				Bedrock (hard) fro

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
932:				
Shakeridge gravelly medial coarse sandy loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Mudwash gravelly medial sandy loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
933:				
Shakeridge gravelly medial coarse sandy loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
934:				
Mudwash gravelly medial sandy loam	80	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%
939:				
Fluvaquentic Humaquepts very fine sandy loam	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Saturation < 2.5'
		Saturation from 12 to 30" depth	0.94	Caving potential
		Rare flooding	0.50	
940:				
Dejonah gravelly loam	50	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Slopes 8 to 15%	0.01	Slopes 8 to 15%
Stagpoint loam	30	Limitations		Limitations
		Fragments (>3") 25 to 50%	0.46	Caving potential
		Slopes 8 to 15%	0.01	Fragments (>3") 25
				Slopes 8 to 15%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
941:				
Dejonah gravelly loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
Stagpoint loam----------	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.46	Caving potential
				Fragments (>3") 25
942:				
Stagpoint loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.46	Caving potential
				Fragments (>3") 25
Dejonah gravelly loam----------	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
948:				
Stagpoint loam----------	55	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		Fragments (>3") 25 to 50%	0.46	Caving potential
				Fragments (>3") 25
Dejonah gravelly loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
949:				
Rogerville taxadjunct fine sandy loam----------	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
950:				
Lumpkin taxadjunct very gravelly medial very fine sandy loam------	40	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes 8 to 15%	0.01	Caving potential
				Slopes 8 to 15%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex
		Limitations	Value	Limitat
950:				
Rock outcrop, olivine basalt, andesite, or mudflow	25	Not rated		Not rated
Powderhouse medial sandy loam	20	Limitations		Limitations
		Slopes 8 to 15%	0.01	Caving potential
				Bedrock (soft) fro
				Slopes 8 to 15%
951:				
Lumpkin taxadjunct very gravelly medial very fine sandy loam	40	Limitations		Limitations
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 4
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
Rock outcrop, andesite	25	Not rated		Not rated
Powderhouse medial sandy loam	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 15%
				Caving potential
				Bedrock (soft) fro
960:				
Surnuf gravelly loam, high elevation	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	1.00	Clay > 60%
961:				
Surnuf gravelly loam, high elevation	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Caving potential
		Shrink-swell (LEP >6)	1.00	Clay > 60%
		Slopes 8 to 15%	0.37	Slopes 8 to 15%
962:				
Surnuf gravelly loam, high elevation	85	Limitations		Limitations
		AASHTO GI >8 (low soil strength)	1.00	Slopes > 15%
		Shrink-swell (LEP >6)	1.00	Caving potential
		Slopes > 15%	1.00	Clay > 60%

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow ex	
		Limitations	Value	Limitat	
963:					
Surnuf gravelly loam, high elevation	85	Limitations		Limitations	
		AASHTO GI >8 (low soil strength)	1.00	Slopes > 15%	
		Shrink-swell (LEP >6)	1.00	Caving potential	
		Slopes > 15%	1.00	Clay > 60%	
990:					
Riverwash, frequently flooded	100	Limitations		Limitations	
		Frequent or occasional flooding	1.00	Saturation < 2.5'	
		Saturation < 12" depth	0.99	Frequent or occasi	
				Caving potential	
991:					
Xerofluvents sandy loam, frequently flooded	75	Limitations		Limitations	
		Frequent or occasional flooding	1.00	Saturation < 2.5'	
		Saturation from 12 to 30" depth	0.02	Caving potential	
				Frequent or occasi	
995:					
Pits, gravel	100	Not rated		Not rated	
996:					
Dumps, excavated material	100	Not rated		Not rated	
997:					
Pits	95	Not rated		Not rated	
998:					
Dumps, landfill	100	Not rated		Not rated	
999:					
Water	100	Not rated		Not rated	

Table 16b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow e
		Limitations	Value	Limitat
DAM:				
Dam, manmade	100	Not rated		Not rated

The interpretation for local roads and streets evaluates the following soil properties at variable
flooding, ponding, wetness, slope, organic Unified classes for low soil strength (PT, OL, and OH), amoun
hard or soft bedrock, depth to a thick or thin cemented pan, fragments more than 3 inches in size, bulk
caving potential of the soil.

The interpretation for shallow excavations evaluates the following soil properties at variable dept
flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as line
percent (LEP), potential for frost action, depth to hard or soft bedrock, depth to a thick or thin cemen
more than 3 inches in size, and soil strength expressed as the AASHTO group index number (AASHTO GI).

Table 17a.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for c
The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the poten
rating is based on the limitation with the highest value. Only the three highest value limitations ar
more limitations. Fine-earth fractions and rock fragments are reported on a weight basis. An explanat
criteria and of the abbreviations used in describing the limitations is given at the end of the table

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
100:				
Anita clay	60	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Ponding (any durati
		Depth to pan < 40"	1.00	Depth to pan < 40"
Galt clay	25	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
				Depth to pan < 40"
		Ponding (any duration)	1.00	
104:				
Bosquejo clay	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
				Ponding (any durati
		Ponding (any duration)	1.00	Rare flooding
		Saturation < 4' depth	1.00	
105:				
Busacca clay loam	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
				Saturation from 3.5
		Ponding (any duration)	1.00	Rare flooding
		Saturation from 4 to 6' depth	0.97	
108:				
Tuscan gravelly loam	45	Limitations		Limitations
		Depth to pan < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Depth to pan < 40"
		Restricted permeability due to bedrock or hardpan	1.00	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
108:				
Igo gravelly loam	20	Limitations		Limitations
		Depth to pan < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Depth to pan < 40"
		Restricted permeability due to bedrock or hardpan	1.00	
Anita clay	15	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"
109:				
Bosquejo clay loam	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Rare flooding
110:				
Bosquejo silt loam, overwash, occasionally flooded	90	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Frequent or occasio
111yu:				
Auburn loam	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
		Slopes 8 to 15%	0.63	Permeability .6-2"/ seepage)
Sobrante loam	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes 8 to 15%	0.63	Bedrock (soft) < 40
		Permeability from .6 to 2"/hr (slow perc)	0.50	Slopes > 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
114yu:				
Auburn gravelly loam	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
		Slopes 8 to 15%	0.63	Permeability .6-2"/ seepage)
Sobrante gravelly loam	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes 8 to 15%	0.63	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.50	Bedrock (hard) < 40
118:				
Xerorthents, tailings	80	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Slopes 2 to 8%
118co:				
Clear Lake clay, frequently flooded	90	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation from 3.5
		Saturation < 4' depth	0.99	
119:				
Xerorthents, tailings	70	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	
Urban land	30	Not rated		Not rated
119yu:				
Auburn gravelly loam	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
119yu:				
Sobrante gravelly loam----------	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.50	Bedrock (hard) < 40
Rock outcrop----------	20	Not rated		Not rated
120:				
Gridley taxadjunct clay loam------	80	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"
121:				
Boga loam----------	45	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Permeability .6-2"/ seepage)
Loemstone loam----------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Permeability .6-2"/ seepage)
121su:				
Columbia fine sandy loam, frequently flooded----------	80	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Saturation < 4' depth	0.99	Saturation from 3.5
125:				
Gridley taxadjunct loam----------	65	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
125:				
Calcic Haploxerolls sandy loam----	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
				Permeability > 2"/h
		Saturation < 4' depth	1.00	Rare flooding
		Rare flooding	0.40	
126:				
Liveoak sandy loam----------	85	Limitations		Limitations
		Saturation < 4' depth	1.00	Permeability > 2"/h
		Seepage in bottom layer	1.00	Saturation from 3.5
		Very rare flooding	0.20	
127:				
Gridley taxadjunct loam----------	85	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"
130:				
Eastbiggs loam----------	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
				Depth to pan < 40"
		Depth to pan < 40"	1.00	Permeability .6-2"/
		Saturation < 4' depth	1.00	seepage)
133:				
Eastbiggs loam----------	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
				Depth to pan < 40"
		Depth to pan < 40"	1.00	Permeability .6-2"/
		Saturation < 4' depth	1.00	seepage)
Galt clay loam----------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
				Ponding (any durati
		Ponding (any duration)	1.00	Depth to pan < 40"
		Depth to pan < 40"	1.00	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
136:				
Duric Xerarents, cut	35	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"
Duric Xerarents, fill	30	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Permeability > 2"/h
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation from 3.5
Eastbiggs fine sandy loam, leveled	25	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Ponding (any durati
		Depth to pan < 40"	1.00	Depth to pan < 40"
138su:				
Liveoak sandy clay loam	85	Limitations		Limitations
		Saturation < 4' depth	1.00	Saturation at < 3.5
		Very rare flooding	0.20	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.18	
139su:				
Liveoak taxadjunct loam, frequently flooded	45	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Saturation from 4 to 6' depth	0.94	Permeability .6-2"/
		Depth to pan 40 to 72"	0.59	seepage)
				Saturation from 3.5
Galt taxadjunct clay loam, frequently flooded	40	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Depth to pan < 40"
		Saturation < 4' depth	1.00	Frequent or occasio

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
143su:				
Marcum clay loam	45	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.98	
Gridley clay loam	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40'
		Depth to bedrock < 40"	1.00	
149yu:				
Flanly sandy loam	80	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40'
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.63	Permeability .6-2"/h seepage)
150:				
Columbia stratified sand to fine sandy loam	85	Limitations		Limitations
		Flooding	1.00	Frequent or occasion
		Saturation < 4' depth	1.00	Permeability > 2"/hr
		Seepage in bottom layer	1.00	Saturation from 3.5
150su:				
Olashes sandy loam	85	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	
151yu:				
Flanly sandy loam	80	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40'
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/h seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
152:				
Gianella fine sandy loam, frequently flooded	85	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.68	
153:				
Gianella sandy loam, frequently flooded	85	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Seepage in bottom layer	1.00	Permeability > 2"/h
154:				
Gianella silt loam, frequently flooded	85	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.68	
158:				
Gianella fine sandy loam, occasionally flooded	85	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Seepage in bottom layer	1.00	Permeability > 2"/h
160:				
Gianella loam, occasionally flooded	85	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Seepage in bottom layer	1.00	Permeability > 2"/h
161:				
Gianella fine sandy loam, rarely flooded	90	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Rare flooding	0.40	Rare flooding

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
162:				
Gianella loam, rarely flooded-----	90	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Rare flooding	0.40	Rare flooding
163yu:				
Holillipah loamy sand----------	85	Limitations		Limitations
		Flooding	1.00	Frequent or occasic
		Seepage in bottom layer	1.00	Permeability > 2"/h
165yu:				
Holland loam----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.50	Permeability .6-2"/ seepage)
Hoda loam----------	25	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	Permeability .6-2"/ seepage)
Hotaw loam----------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.50	Permeability .6-2"/ seepage)
173yu:				
Hotaw loam----------	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.50	Permeability .6-2"/ seepage)
Chawanakee gravelly sandy loam----	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
173yu:				
Holland loam	15	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.50	Permeability .6-2"/ seepage)
175:				
Farwell clay loam, rarely flooded	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Rare flooding
		Rare flooding	0.40	Permeability .6-2"/ seepage)
176:				
Farwell loam, occasionally flooded	85	Limitations		Limitations
		Flooding	1.00	Frequent or occasic
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
176yu:				
Jocal loam	80	Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.50	Permeability .6-2"/ seepage)
177:				
Farwell silt loam, occasionally flooded	85	Limitations		Limitations
		Flooding	1.00	Frequent or occasic
		Seepage in bottom layer	1.00	Permeability > 2"/h
178:				
Arbuckle gravelly loam	87	Limitations		Limitations
		Permeability from .6 to 2"/hr (slow perc)	0.92	Permeability .6-2"/ seepage)
		Rare flooding	0.40	Rare flooding
179:				
Moda taxadjunct loam	65	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
179:				
Arbuckle gravelly loam----------	20	Limitations		Limitations
		Permeability from .6 to 2"/hr (slow perc)	0.92	Permeability .6-2"/ seepage)
		Rare flooding	0.40	Rare flooding
180:				
Dodgeland silty clay loam, occasionally flooded----------	85	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Frequent or occasio
181:				
Dodgeland silty clay loam, frequently flooded----------	80	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Frequent or occasio
188yu:				
Mariposa taxadjunct gravelly loam	80	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage)
189:				
Esquon silt loam, overwash--------	90	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Permeability > 2"/h
189yu:				
Mariposa taxadjunct gravelly loam	80	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
196yu:				
Mildred cobbly loam	80	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	
200:				
Parrott silt loam, occasionally flooded	85	Limitations		Limitations
		Flooding	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Frequent or occasio
		Seepage in bottom layer	1.00	Permeability .6-2"/ seepage)
201:				
Parrott silt loam, frequently flooded	85	Limitations		Limitations
		Flooding	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Frequent or occasio
		Seepage in bottom layer	1.00	Permeability .6-2"/ seepage)
203:				
Kusalslough silty clay loam, occasionally flooded	85	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Frequent or occasio
205:				
Parrott silt loam, frequently flooded	50	Limitations		Limitations
		Flooding	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Frequent or occasio
		Seepage in bottom layer	1.00	Permeability .6-2"/ seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
205:				
Vermet silt loam, frequently flooded	35	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Frequent or occasio
206:				
Islandbar sandy loam	60	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Slopes 8 to 15%	0.01	Slopes > 8%
Chawanakee gravelly sandy loam	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/h
		Seepage in bottom layer	1.00	Slopes > 8%
207:				
Islandbar sandy loam	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
Chawanakee gravelly sandy loam	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/h
208:				
Islandbar sandy loam	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
Chawanakee gravelly sandy loam	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/h

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
209:				
Islandbar sandy loam----------	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40"
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/hr
210:				
Featherfalls sandy loam----------	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.01	Permeability .6-2"/h seepage)
Islandbar sandy loam----------	35	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Slopes 8 to 15%	0.01	Slopes > 8%
211:				
Featherfalls sandy loam----------	55	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/h seepage)
Islandbar sandy loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr
212:				
Featherfalls sandy loam----------	55	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/h seepage)
Islandbar sandy loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
213:				
Featherfalls sandy loam----------	45	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
Islandbar sandy loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
214:				
Crystalhill gravelly coarse sandy loam----------	35	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Slopes 8 to 15%	0.16	Slopes > 8%
		Depth to bedrock 40 - 72"	0.06	
Oregongulch gravelly sandy loam---	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40
				Permeability > 2"/h
		Depth to bedrock < 40"	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	
Craigsaddle coarse sandy loam-----	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/h
				Slopes 2 to 8%
		Depth to bedrock 40 - 72"	0.36	Bedrock (soft) from
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
215:				
Crystalhill gravelly coarse sandy loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Depth to bedrock 40 - 72"	0.06	
Oregongulch gravelly sandy loam---	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40
				Slopes > 8%
		Depth to bedrock < 40"	1.00	Permeability > 2"/h
		Slopes > 15%	1.00	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
215:				
Craigsaddle coarse sandy loam-----	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8% Permeability > 2"/h
		Slopes > 15%	1.00	Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.36	
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
216:				
Crystalhill gravelly coarse sandy loam-----------------------------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Depth to bedrock 40 - 72"	0.06	
Oregongulch gravelly sandy loam---	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40 Slopes > 8%
		Depth to bedrock < 40"	1.00	Permeability > 2"/h
		Slopes > 15%	1.00	
Craigsaddle coarse sandy loam-----	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8% Permeability > 2"/h
		Slopes > 15%	1.00	Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.36	
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
217:				
Crystalhill gravelly coarse sandy loam-----------------------------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Depth to bedrock 40 - 72"	0.06	
Oregongulch gravelly sandy loam---	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40 Slopes > 8%
		Depth to bedrock < 40"	1.00	Permeability > 2"/h
		Slopes > 15%	1.00	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
217:				
Craigsaddle coarse sandy loam-----	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Permeability > 2"/h
		Slopes > 15%	1.00	Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.36	
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
218:				
Rock outcrop, quartz diorite------	60	Not rated		Not rated
Lithic Xerorthents gravelly sandy loam-----------------------------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	
Chawanakee gravelly sandy loam----	15	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
				Permeability > 2"/h
		Seepage in bottom layer	1.00	
219:				
Rock outcrop, quartz diorite------	60	Not rated		Not rated
Lithic Xerorthents gravelly sandy loam-----------------------------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	
Chawanakee gravelly sandy loam----	15	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/h

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
220:				
Esquon clay, frequently flooded---	60	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5'
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any duratio
		Ponding (any duration)	1.00	Frequent or occasion
Clear Lake silty clay loam, overwash---	30	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5'
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any duratio
		Ponding (any duration)	1.00	Frequent or occasion
221yu:				
Sites loam---	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%
		Depth to bedrock 40 - 72"	0.22	Permeability .6-2"/h seepage)
222yu:				
Sites loam---	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.63	Permeability .6-2"/h seepage)
		Depth to bedrock 40 - 72"	0.22	
225yu:				
Sites gravelly loam, bedrock substratum---	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%
		Depth to bedrock 40 - 72"	0.63	Bedrock (soft) from
226yu:				
Sites gravelly loam, bedrock substratum---	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.63	Bedrock (soft) from
		Slopes 8 to 15%	0.63	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
227yu:				
Sites gravelly loam, bedrock substratum	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.63	
242yu:				
Surnuf loam	80	Limitations		Limitations
		Slopes 8 to 15%	0.63	Slopes > 8%
243yu:				
Surnuf loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
244yu:				
Surnuf loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
245:				
Surnuf loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
248yu:				
Trainer loam	85	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Saturation < 4' depth	0.99	Saturation from 3.5
250:				
Llanoseco, occasionally flooded	90	Limitations		Limitations
		Flooding	1.00	Ponding (any durati
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Frequent or occasio
		Ponding (any duration)	1.00	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
252:				
Whitecabin silty clay, occasionally flooded	60	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Frequent or occasio
Ordferry silty clay, occasionally flooded	25	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Depth to pan < 40"
252yu:				
Woodleaf gravelly loam	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (hard) < 40
		Depth to bedrock < 40"	1.00	Slopes > 8%
		Slopes 8 to 15%	0.04	Fragments (>3") 20-
253yu:				
Woodleaf gravelly loam	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (hard) < 40
		Depth to bedrock < 40"	1.00	Slopes > 8%
		Slopes > 15%	1.00	Fragments (>3") 20-
255:				
Whitecabin silty clay loam, occasionally flooded	60	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Frequent or occasio
Ordferry silty clay, occasionally flooded	30	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Depth to pan < 40"

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
256:				
Whitecabin silt loam, occasionally flooded	85	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5'
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any duratio
		Ponding (any duration)	1.00	Frequent or occasion
257:				
Llanoseco, frequently flooded	90	Limitations		Limitations
		Flooding	1.00	Ponding (any duratio
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Frequent or occasion
		Ponding (any duration)	1.00	
258:				
Codora, occasionally flooded	85	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5'
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any duratio
		Ponding (any duration)	1.00	Frequent or occasion
260:				
Ordferry silty clay, occasionally flooded	90	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5'
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any duratio
		Ponding (any duration)	1.00	Depth to pan < 40"
280:				
Columbia taxadjunct stratified very fine sandy loam	80	Limitations		Limitations
		Flooding	1.00	Frequent or occasion
		Saturation < 4' depth	1.00	Permeability > 2"/hr
		Seepage in bottom layer	1.00	Saturation from 3.5
290:				
Perkins gravelly loam	90	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Saturation from 4 to 6' depth	0.12	
		Permeability from .6 to 2"/hr (slow perc)	0.08	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
300:				
Redsluff gravelly loam----------	80	Limitations		Limitations
		Saturation < 4' depth	1.00	Permeability > 2"/h
		Seepage in bottom layer	1.00	Rare flooding
		Permeability from .6 to 2"/hr (slow perc)	0.82	
301:				
Wafap gravelly loam----------	70	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
				Fragments (>3") > 3
		Saturation < 4' depth	1.00	Depth to pan from 4
		Fragments (>3") >50%	1.00	
Hamslough clay----------	15	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
				Depth to pan < 40"
		Ponding (any duration)	1.00	
302:				
Redtough loam----------	50	Limitations		Limitations
		Depth to pan < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Depth to pan < 40"
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-
Redswale cobbly loam----------	35	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"
303:				
Munjar gravelly loam----------	60	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
				Depth to pan < 40"
		Depth to pan < 40"	1.00	Permeability .6-2"/
		Saturation < 4' depth	1.00	seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
303:				
Tuscan taxadjunct gravelly clay loam	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5 Depth to pan < 40"
		Depth to pan < 40"	1.00	
		Saturation < 4' depth	1.00	
Galt clay	10	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5 Ponding (any durati
		Ponding (any duration)	1.00	Depth to pan < 40"
		Depth to pan < 40"	1.00	
304:				
Redtough loam	80	Limitations		Limitations
		Depth to pan < 40"	1.00	Depth to pan < 40"
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8% Fragments (>3") 20-
		Slopes > 15%	1.00	
305:				
Redtough gravelly loam	45	Limitations		Limitations
		Depth to pan < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Depth to pan < 40"
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage)
Redswale loam	25	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"
Anita, gravelly duripan	20	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
306:				
Duric Xerarents, fill----------	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
				Saturation at < 3.5
		Ponding (any duration)	1.00	Permeability > 2"/h
		Saturation < 4' depth	1.00	
Duric Xerarents, cut----------	40	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durati
		Depth to pan < 40"	1.00	Depth to pan < 40"
		Saturation < 4' depth	1.00	Permeability > 2"/h
307:				
Duric Xerarents clay loam, leveled----------	70	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"
310:				
Kimball loam----------	85	No limitations		Limitations
				Permeability .6-2"/ seepage)
317:				
Thompsonflat loam----------	75	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%
				Permeability .6-2"/
		Saturation from 4 to 6' depth	0.43	seepage)
318:				
Thompsonflat fine sandy loam------	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%
		Saturation from 4 to 6' depth	0.43	
Oroville gravelly fine sandy loam	40	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
320:				
Vistarobles sandy loam----------	50	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5'
		Depth to pan < 40"	1.00	Ponding (any duratio
		Saturation < 4' depth	1.00	Depth to pan < 40"
Redding loam----------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Depth to pan < 40"
				Saturation at < 3.5'
		Depth to pan < 40"	1.00	Permeability .6-2"/h
		Saturation < 4' depth	1.00	seepage)
321:				
Durixeralfs, fine-loamy, gravelly fine sandy loam----------	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Depth to pan < 40"
				Saturation at < 3.5'
		Depth to pan < 40"	1.00	Bedrock (soft) from
		Saturation < 4' depth	1.00	
Durixeralfs, loamy-skeletal, gravelly fine sandy loam---------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40'
		Ponding (any duration)	1.00	Ponding (any duratio
		Depth to pan < 40"	1.00	Depth to pan < 40"
Typic Petraquepts silty clay------	15	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5'
		Ponding (any duration)	1.00	Bedrock (soft) < 40'
		Depth to pan < 40"	1.00	Ponding (any duratio
330:				
Wilsoncreek loam, occasionally flooded----------	60	Limitations		Limitations
		Flooding	1.00	Frequent or occasion
		Saturation from 4 to 6' depth	0.97	Permeability > 2"/hr
		Permeability from .6 to 2"/hr (slow perc)	0.08	Saturation from 3.5

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
330:				
Trainer loam, occasionally flooded	25	Limitations		Limitations
		Flooding	1.00	Frequent or occasion
		Saturation < 4' depth	1.00	Permeability > 2"/hr
		Seepage in bottom layer	1.00	Saturation from 3.5
331:				
Thompsonflat loam	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8% Permeability .6-2"/h seepage)
		Slopes > 15%	1.00	
		Saturation from 4 to 6' depth	0.43	
335:				
Galt clay loam	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5' Ponding (any duratio
		Ponding (any duration)	1.00	Depth to pan < 40"
		Depth to pan < 40"	1.00	
336:				
Galt clay	90	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5' Ponding (any duratio
		Ponding (any duration)	1.00	Depth to pan < 40"
		Depth to pan < 40"	1.00	
337:				
Galt clay loam	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5' Ponding (any duratio
		Ponding (any duration)	1.00	Depth to pan < 40"
		Depth to pan < 40"	1.00	
338:				
Oxyaquic Xerofluvents silt loam	90	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any duratio
		Saturation < 4' depth	1.00	Permeability > 2"/hr
		Rare flooding	0.40	Rare flooding

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
339:				
Oxyaquic Xerofluvents sandy loam, frequently flooded	90	Limitations		Limitations
		Flooding	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Frequent or occasic
		Saturation < 4' depth	1.00	Permeability > 2"/h
340:				
Rock outcrop, Lovejoy basalt	35	Not rated		Not rated
Thermalrocks very gravelly loam	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes 2 to 8%
				Fragments (>3") 20-
		Fragments (>3") 25 to 50%	0.01	
Campbellhills gravelly loam	20	Limitations		Limitations
		Saturation < 4' depth	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%
				Bedrock (hard) from
		Depth to bedrock 40 - 72"	0.78	
341:				
Elsey loam	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Bedrock (hard) < 40
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Slopes 2 to 8%
Beatsonhollow gravelly loam	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Bedrock (hard) < 40
		Saturation < 4' depth	1.00	Ponding (any durati
Campbellhills gravelly loam	20	Limitations		Limitations
		Saturation < 4' depth	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (hard) from
		Depth to bedrock 40 - 72"	0.78	
Rock outcrop, Lovejoy basalt	20	Not rated		Not rated

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
342:				
Thermalrocks very gravelly loam---	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
				Fragments (>3") 20-
		Slopes > 15%	1.00	
Beatsonhollow taxadjunct fine sandy loam----------	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage)
Rock outcrop, Lovejoy basalt------	15	Not rated		Not rated
343:				
Coalcanyon very cobbly loam-------	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Fragments (>3") > 3
		Fragments (>3") >50%	0.99	Permeability .6-2"/
		Slopes 8 to 15%	0.16	seepage)
Coonhollow gravelly loam----------	35	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Fragments (>3") > 3
		Fragments (>3") >50%	1.00	Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.94	
344:				
Coalcanyon very cobbly loam-------	45	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 3
				Permeability .6-2"/
		Fragments (>3") >50%	0.99	seepage)
Coonhollow gravelly loam----------	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 3
				Bedrock (soft) from
		Fragments (>3") >50%	1.00	
Rock outcrop, Lovejoy basalt------	15	Not rated		Not rated

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
346:				
Cherotable loam	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5'
				Bedrock (hard) from
		Saturation < 4' depth	1.00	Slopes 2 to 8%
		Depth to bedrock 40 - 72"	0.94	
Elsey loam	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5'
		Saturation < 4' depth	1.00	Bedrock (hard) < 40'
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Slopes 2 to 8%
347:				
Haplic Palexeralfs loam	90	Limitations		Limitations
		Flooding	1.00	Frequent or occasion
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%
353:				
Cherokeespring gravelly silt loam	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Permeability .6-2"/h
		Slopes 8 to 15%	0.63	seepage)
355:				
Coalcanyon very cobbly loam	55	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 35
				Permeability .6-2"/h
		Fragments (>3") >50%	0.99	seepage)
Talus	35	Not rated		Not rated
356:				
Coalcanyon very cobbly loam	45	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 35
				Permeability .6-2"/h
		Fragments (>3") >50%	0.99	seepage)
Rock outcrop, basalt cliffs	20	Not rated		Not rated

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
356:				
Talus	20	Not rated		Not rated
Coonhollow gravelly loam	10	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 3
				Bedrock (soft) from
		Fragments (>3") >50%	1.00	
360:				
Typic Xerofluvents, coarse-loamy--	45	Limitations		Limitations
		Saturation < 4' depth	1.00	Permeability > 2"/h
		Seepage in bottom layer	1.00	Rare flooding
		Rare flooding	0.40	
Typic Xerofluvents, sandy-skeletal	40	Limitations		Limitations
		Saturation < 4' depth	1.00	Permeability > 2"/h
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Rare flooding
		Seepage in bottom layer	1.00	
361:				
Typic Xerofluvents, sandy-skeletal	85	Limitations		Limitations
		Saturation < 4' depth	1.00	Permeability > 2"/h
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Rare flooding
		Seepage in bottom layer	1.00	
362:				
Ultic Haploxeralfs, sandstone, low elevation, very deep	60	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/h
				Slopes 2 to 8%
		Seepage in bottom layer	1.00	
Ultic Haploxeralfs, sandstone, low elevation, deep	25	Limitations		Limitations
		Depth to bedrock 40 - 72"	0.99	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.32	Bedrock (soft) from
				Slopes 2 to 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
363:				
Ultic Haploxeralfs, sandstone, low elevation, very deep	60	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/hr
		Seepage in bottom layer	1.00	Slopes 2 to 8%
Ultic Haploxeralfs, sandstone, low elevation, deep	30	Limitations		Limitations
		Depth to bedrock 40 - 72"	0.99	Slopes > 8%
		Slopes 8 to 15%	0.63	Permeability > 2"/hr
		Permeability from .6 to 2"/hr (slow perc)	0.32	Bedrock (soft) from
364:				
Ultic Haploxeralfs, sandstone, low elevation, deep	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.99	Permeability > 2"/hr
		Permeability from .6 to 2"/hr (slow perc)	0.32	Bedrock (soft) from
Ultic Haploxeralfs, sandstone, low elevation, very deep	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	Permeability > 2"/hr
		Seepage in bottom layer	1.00	
365:				
Palexerults gravelly loam	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	Permeability .6-2"/h
		Depth to bedrock 40 - 72"	0.09	seepage)
366:				
Palexerults gravelly loam	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	Permeability .6-2"/h
		Depth to bedrock 40 - 72"	0.09	seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
370:				
Palexerults gravelly loam---------	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%
		Depth to bedrock 40 - 72"	0.09	Permeability .6-2"/ seepage)
375:				
Wickscorner loam------------------	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%
		Saturation from 4 to 6' depth	0.43	
376:				
Flagcanyon gravelly loam----------	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Depth to pan < 40"
		Saturation < 4' depth	1.00	Slopes 2 to 8%
Wickscorner loam------------------	35	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%
		Saturation from 4 to 6' depth	0.43	
377:				
Flagcanyon taxadjunct fine sandy loam-----------------------------	55	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Ponding (any durati
		Depth to pan < 40"	1.00	Depth to pan < 40"
Durixeralfs, clayey-skeletal, loam	20	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"
Duraquerts gravelly clay----------	15	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
400:				
Subaco taxadjunct clay----------	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5'
				Ponding (any duratio
		Ponding (any duration)	1.00	Depth to pan < 40"
		Depth to pan < 40"	1.00	
415:				
Ignord fine sandy loam----------	90	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Rare flooding	0.40	Rare flooding
416:				
Calcic Haploxerolls sandy loam----	90	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5'
				Permeability > 2"/hr
		Saturation < 4' depth	1.00	Rare flooding
		Rare flooding	0.40	
418:				
Almendra loam----------	85	Limitations		Limitations
		Permeability from .6 to 2"/hr (slow perc)	0.82	Permeability .6-2"/h seepage)
419:				
Conejo fine sandy loam, overwash--	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/hr
420:				
Conejo clay loam----------	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/hr
425:				
Vina fine sandy loam----------	85	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Rare flooding	0.40	Rare flooding
426:				
Vina loam----------	85	Limitations		Limitations
		Permeability from .6 to 2"/hr (slow perc)	0.50	Permeability .6-2"/h seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
439:				
Oxyaquic Xerofluvents clay--------	85	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Frequent or occasio
440:				
Oxyaquic Xerofluvents silt loam, frequently flooded----------	80	Limitations		Limitations
		Flooding	1.00	Ponding (any durati
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Frequent or occasio
		Ponding (any duration)	1.00	Permeability > 2"/h
441:				
Oxyaquic Xerofluvents very fine sandy loam----------	90	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Permeability > 2"/h
		Saturation < 4' depth	1.00	Saturation at < 3.5
442:				
Durixerolls clay loam----------	55	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"
Haploxerolls clay loam----------	30	Limitations		Limitations
		Saturation < 4' depth	1.00	Saturation at < 3.5
		Permeability from .6 to 2"/hr (slow perc)	0.92	Rare flooding
		Depth to pan 40 to 72"	0.41	Permeability .6-2"/ seepage)
443:				
Durixerolls loam----------	60	Limitations		Limitations
		Depth to pan < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Depth to pan < 40"
		Rare flooding	0.40	Permeability .6-2"/ seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
443:				
Haploxerolls loam	25	Limitations		Limitations
		Saturation < 4' depth	1.00	Saturation at < 3.5
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Depth to pan 40 to 72"	0.69	Rare flooding
445:				
Chico loam	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
447:				
Charger fine sandy loam	80	Limitations		Limitations
		Saturation < 4' depth	1.00	Permeability > 2"/h
		Seepage in bottom layer	1.00	Saturation from 3.5
		Rare flooding	0.40	Rare flooding
448:				
Haploxerolls clay loam	75	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Rare flooding
		Saturation from 4 to 6' depth	0.43	Permeability .6-2"/ seepage)
		Rare flooding	0.40	
449:				
Haploxerolls loam	75	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Saturation from 4 to 6' depth	0.43	Rare flooding
		Rare flooding	0.40	
500:				
Lofgren clay	45	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan from 4
Blavo clay	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Ponding (any durati
		Depth to pan < 40"	1.00	Depth to pan < 40"

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
501:				
Lofgren clay, occasionally flooded	45	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Frequent or occasio
Blavo clay, occasionally flooded	40	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Depth to pan < 40"
502:				
Blavo silt loam, overwash, occasionally flooded	80	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Depth to pan < 40"
519:				
Edjobe silty clay	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	
520:				
Esquon clay	60	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Rare flooding
Neerdobe clay	30	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Ponding (any durati
		Depth to pan < 40"	1.00	Depth to pan < 40"

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
521:				
Neerdobe silt loam, overwash------	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5 Ponding (any durati
		Ponding (any duration)	1.00	Permeability > 2"/h
		Saturation < 4' depth	1.00	
522:				
Clear Lake silty clay loam, overwash-------------------------	80	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati Frequent or occasio
		Ponding (any duration)	1.00	
523:				
Esquon silty clay loam, overwash--	80	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati Frequent or occasio
		Ponding (any duration)	1.00	
525:				
Govstanford loam-----------------	85	Limitations		Limitations
		Saturation < 4' depth	1.00	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.50	Saturation at < 3.5
526:				
Govstanford loam, occasionally flooded-------------------------	85	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Saturation < 4' depth	1.00	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.50	Saturation at < 3.5
528:				
Neerdobe clay loam---------------	90	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5 Ponding (any durati
		Ponding (any duration)	1.00	Depth to pan < 40"
		Depth to pan < 40"	1.00	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
550:				
Dunstone loam, dry----------	60	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage)
				Slopes 2 to 8%
Loafercreek silt loam, dry--------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Permeability from .6 to 2"/hr (slow perc)	0.08	Slopes > 8%
		Slopes 8 to 15%	0.01	Permeability > 2"/h
551:				
Dunstone loam, dry----------	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage)
Lomarica loam----------	15	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40
		Depth to bedrock < 40"	1.00	Slopes > 8%
		Slopes > 15%	1.00	
Argonaut taxadjunct loam----------	15	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40
		Depth to bedrock < 40"	1.00	Slopes > 8%
		Slopes > 15%	1.00	
552:				
Dunstone gravelly loam----------	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Bedrock (soft) < 40
		Slopes 8 to 15%	0.01	Slopes > 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
552:				
Loafercreek gravelly loam---------	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40"
		Permeability from .6 to 2"/hr (slow perc)	0.02	Slopes > 8%
		Slopes 8 to 15%	0.01	Permeability > 2"/hr
553:				
Dunstone gravelly loam----------	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40"
		Slopes > 15%	1.00	Bedrock (soft) < 40"
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
Loafercreek gravelly loam---------	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40"
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.02	Permeability > 2"/hr
554:				
Dunstone gravelly loam----------	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40"
		Slopes > 15%	1.00	Bedrock (soft) < 40"
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
Loafercreek gravelly loam---------	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40"
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.02	Permeability > 2"/hr
555:				
Dunstone gravelly loam----------	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40"
		Slopes > 15%	1.00	Bedrock (soft) < 40"
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
555:				
Loafercreek gravelly loam---------	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.02	Permeability > 2"/h
556:				
Mounthope loam---------------------	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.69	Bedrock (soft) from
		Slopes 8 to 15%	0.01	Permeability .6-2"/ seepage)
Hartsmill gravelly loam-----------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.18	Permeability .6-2"/ seepage)
		Fragments (>3") 25 to 50%	0.02	
557:				
Mounthope loam---------------------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.69	Permeability .6-2"/ seepage)
Hartsmill gravelly loam-----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.18	
558:				
Hartsmill gravelly loam-----------	55	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.18	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
558:				
Mounthope loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from Permeability .6-2"/
		Depth to bedrock 40 - 72"	0.69	seepage)
559:				
Hartsmill gravelly loam	55	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.18	
Mounthope loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from Permeability .6-2"/
		Depth to bedrock 40 - 72"	0.69	seepage)
560:				
Hartsmill gravelly loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.18	
Mounthope loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from Permeability .6-2"/
		Depth to bedrock 40 - 72"	0.69	seepage)
561:				
Bigridge loam	50	Limitations		Limitations
		Depth to bedrock 40 - 72"	0.75	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.02	Permeability > 2"/h Bedrock (soft) from
		Slopes 8 to 15%	0.01	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
561:				
Minniecreek loam	35	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40 Slopes > 8%
		Depth to bedrock < 40"	1.00	Permeability .6-2"/
		Slopes 8 to 15%	0.01	seepage)
562:				
Bigridge loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.75	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.02	Bedrock (soft) from
Minniecreek loam	35	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40 Slopes > 8%
		Depth to bedrock < 40"	1.00	Permeability .6-2"/
		Slopes > 15%	1.00	seepage)
563:				
Bigridge loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.75	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.02	Bedrock (soft) from
Minniecreek loam	35	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40 Slopes > 8%
		Depth to bedrock < 40"	1.00	Permeability .6-2"/
		Slopes > 15%	1.00	seepage)
564:				
Bigridge loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.75	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.02	Bedrock (soft) from

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
564:				
Minniecreek loam----------	35	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40 Slopes > 8%
		Depth to bedrock < 40"	1.00	Permeability .6-2"/
		Slopes > 15%	1.00	seepage)
565:				
Dunstone loam, dry----------	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage) Slopes 2 to 8%
Argonaut taxadjunct loam----------	30	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40 Slopes > 8%
		Depth to bedrock < 40"	1.00	
		Slopes 8 to 15%	0.01	
Sunnyslope loam----------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes 2 to 8%
566:				
Dunstone loam, dry----------	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage) Slopes 2 to 8%
Loafercreek silt loam, dry--------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Permeability from .6 to 2"/hr (slow perc)	0.08	Slopes > 8% Permeability > 2"/h
		Slopes 8 to 15%	0.01	
Katskillhill loam----------	15	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8% Bedrock (hard) from
		Depth to bedrock 40 - 72"	0.99	
		Slopes 8 to 15%	0.01	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
567:				
Dunstone loam, dry----------	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40"
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/h seepage)
				Slopes 2 to 8%
Loafercreek silt loam, dry--------	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40"
		Permeability from .6 to 2"/hr (slow perc)	0.08	Slopes > 8%
		Slopes 8 to 15%	0.01	Permeability > 2"/hr
Argonaut taxadjunct loam----------	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40"
		Depth to bedrock < 40"	1.00	Slopes > 8%
		Slopes 8 to 15%	0.01	
577:				
Parkshill coarse sandy loam-------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability > 2"/hr
		Slopes 8 to 15%	0.01	Slopes > 8%
Flanly loam-----------------------	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40"
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
		Slopes 8 to 15%	0.01	Permeability .6-2"/h seepage)
Hurleton gravelly sandy loam------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40"
		Permeability from .6 to 2"/hr (slow perc)	0.18	Permeability > 2"/hr
		Slopes 8 to 15%	0.04	Slopes > 8%
578:				
Flanly loam-----------------------	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40"
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
		Slopes 8 to 15%	0.01	Permeability .6-2"/h seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
578:				
Swedesflat cobbly fine sandy loam	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40"
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
		Slopes 8 to 15%	0.16	
580:				
Surnuf taxadjunct loam----------	40	Limitations		Limitations
		Permeability from .6 to 2"/hr (slow perc)	0.92	Slopes > 8%
		Slopes 8 to 15%	0.01	Permeability .6-2"/h seepage)
Griffgulch very gravelly silt loam	25	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.94	Fragments (>3") > 35
		Depth to bedrock 40 - 72"	0.36	Bedrock (hard) from
Rock outcrop, metavolcanic--------	20	Not rated		Not rated
581:				
Surnuf taxadjunct loam----------	65	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.92	Permeability .6-2"/h seepage)
Griffgulch very gravelly silt loam	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	Fragments (>3") > 35
		Fragments (>3") 25 to 50%	0.94	Bedrock (hard) from
582:				
Surnuf taxadjunct loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.92	Permeability .6-2"/h seepage)
Griffgulch very gravelly silt loam	35	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	Fragments (>3") > 35
		Fragments (>3") 25 to 50%	0.94	Bedrock (hard) from

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
583:				
Surnuf taxadjunct loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.92	Permeability .6-2"/ seepage)
Griffgulch very gravelly silt loam	35	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	Fragments (>3") > 3
		Fragments (>3") 25 to 50%	0.94	Bedrock (hard) from
584:				
Flanly loam----------	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage)
Swedesflat cobbly fine sandy loam	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	
Rackerby very gravelly sandy loam	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage)
585:				
Flanly loam----------	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
		Slopes 8 to 15%	0.01	Permeability .6-2"/ seepage)
Sommeyflat loam----------	35	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability .6-2"/
		Permeability from .6 to 2"/hr (slow perc)	0.92	seepage)
		Depth to bedrock 40 - 72"	0.01	Slopes 2 to 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
586:				
Sommeyflat loam	45	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability .6-2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.92	seepage)
Mounthope loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from Permeability .6-2"/h
		Depth to bedrock 40 - 72"	0.69	seepage)
587:				
Sommeyflat loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability .6-2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.92	seepage)
Mounthope loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from Permeability .6-2"/h
		Depth to bedrock 40 - 72"	0.69	seepage)
Hurleton gravelly sandy loam	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40'
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.18	Permeability > 2"/hr
588:				
Ultic Haploxeralfs, thermic, high terrace	95	Limitations		Limitations
		Saturation < 4' depth	1.00	Saturation at < 3.5'
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8% Permeability .6-2"/h seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
589:				
Ultic Haploxeralfs, thermic, high terrace	95	Limitations		Limitations
		Saturation < 4' depth	1.00	Saturation at < 3.5
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
590:				
Vistarobles sandy loam	30	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"
Redding loam	25	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Depth to pan < 40"
		Depth to pan < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Permeability .6-2"/ seepage)
Argonaut taxadjunct loam	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40
		Depth to bedrock < 40"	1.00	Slopes 2 to 8%
Haploxererts gravelly silty clay	15	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Bedrock (soft) from
603:				
Oroville gravelly fine sandy loam	30	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"
Thermalito sandy loam	25	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Depth to pan < 40"
		Saturation < 4' depth	1.00	Slopes 2 to 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
603:				
Fernandez sandy loam----------	15	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	
Thompsonflat fine sandy loam------	15	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%
		Saturation from 4 to 6' depth	0.43	
605:				
Duric Xerarents fine sandy loam, leveled----------	75	Limitations		Limitations
		Ponding (any duration)	1.00	Ponding (any durati
		Depth to pan < 40"	1.00	Depth to pan < 40"
		Saturation < 4' depth	1.00	Saturation from 3.5
Oroville gravelly fine sandy loam	20	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"
606:				
Redtough loam----------	45	Limitations		Limitations
		Depth to pan < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Depth to pan < 40"
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-
Fallager loam----------	30	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"
Anita, gravelly duripan----------	15	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
609:				
Anita, gravelly duripan	50	Limitations		Limitations
		Ponding (any duration)	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Ponding (any durati
		Saturation < 4' depth	1.00	Depth to pan < 40"
Tuscan taxadjunct gravelly clay loam	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
				Depth to pan < 40"
		Depth to pan < 40"	1.00	
		Saturation < 4' depth	1.00	
614:				
Doemill gravelly loam	50	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage)
Jokerst very cobbly loam	40	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Ponding (any duration)	1.00	Ponding (any durati
615:				
Doemill gravelly loam	50	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage)
Jokerst very cobbly loam	40	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Ponding (any duration)	1.00	Ponding (any durati
616:				
Jokerst very cobbly loam	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
616:				
Doemill gravelly loam----------	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5'
		Saturation < 4' depth	1.00	Bedrock (hard) < 40'
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
Typic Haploxeralfs gravelly loam--	15	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.84	Bedrock (soft) < 40'
617:				
Doemill gravelly loam----------	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5'
		Saturation < 4' depth	1.00	Bedrock (hard) < 40'
		Slopes > 15%	1.00	Slopes > 8%
Jokerst very cobbly loam----------	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5'
		Saturation < 4' depth	1.00	Bedrock (hard) < 40'
		Slopes > 15%	1.00	Slopes > 8%
Typic Haploxeralfs gravelly loam--	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40'
619:				
Carhart taxadjunct clay----------	90	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5'
		Ponding (any duration)	1.00	Bedrock (hard) < 40'
		Saturation < 4' depth	1.00	Ponding (any duratio
620:				
Doemill gravelly loam----------	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5'
		Saturation < 4' depth	1.00	Bedrock (hard) < 40'
		Restricted permeability due to bedrock or hardpan	1.00	Slopes 2 to 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
620:				
Jokerst very cobbly loam----------	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Bedrock (hard) < 40
		Saturation < 4' depth	1.00	Ponding (any durati
Ultic Haploxeralfs, thermic, gravelly loam----------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Bedrock (hard) < 40
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40
621:				
Doemill gravelly loam----------	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
Jokerst very cobbly loam----------	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
Ultic Haploxeralfs, thermic, gravelly loam----------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Bedrock (hard) < 40
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40
622:				
Xerorthents, shallow----------	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
622:				
Typic Haploxeralfs gravelly loam--	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (hard) < 40
				Bedrock (soft) < 40
		Depth to bedrock 40 - 72"	0.99	
Rock outcrop, mudflow-breccia cliffs----------	15	Not rated		Not rated
623:				
Xerorthents, shallow----------	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
Typic Haploxeralfs gravelly loam--	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (hard) < 40
				Bedrock (soft) < 40
		Depth to bedrock 40 - 72"	0.99	
Rock outcrop, mudflow-breccia cliffs----------	20	Not rated		Not rated
624:				
Ultic Haploxeralfs, mesic, gravelly loam----------	60	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 3
				Bedrock (hard) from
		Fragments (>3") >50%	0.99	Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.99	
Rockstripe very gravelly loam-----	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes 2 to 8%
				Fragments (>3") 20-
		Fragments (>3") 25 to 50%	0.01	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
625:				
Ultic Haploxeralfs, mesic, gravelly loam	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Fragments (>3") > 3
		Slopes > 15%	1.00	Bedrock (hard) from
		Fragments (>3") >50%	0.99	
Rockstripe very gravelly loam	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-
626:				
Ultic Haploxeralfs gravelly loam	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Bedrock (hard) from
		Slopes > 15%	1.00	Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.86	
Rockstripe very gravelly loam	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-
Rock outcrop, mudflow-breccia cliffs	15	Not rated		Not rated
627:				
Ultic Haploxeralfs gravelly loam	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Bedrock (hard) from
		Slopes > 15%	1.00	Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.86	
Rockstripe very gravelly loam	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
627:				
Rock outcrop, mudflow-breccia cliffs	15	Not rated		Not rated
628:				
Rockstripe very gravelly loam	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-
Ultic Haploxeralfs gravelly loam	35	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	Bedrock (hard) from
		Depth to bedrock 40 - 72"	0.86	Bedrock (soft) from
Rock outcrop, mudflow-breccia cliffs	20	Not rated		Not rated
629:				
Slideland gravelly loam	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.37	Permeability .6-2"/ seepage)
630:				
Slideland gravelly loam	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	Permeability .6-2"/ seepage)
631:				
Slideland gravelly loam	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	Permeability .6-2"/ seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
632:				
Ultic Haploxeralfs, conglomerate, very deep	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.84	
Ultic Haploxeralfs, conglomerate, moderately deep	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") 20-
		Fragments (>3") 25 to 50%	0.32	Slopes 2 to 8%
633:				
Ultic Haploxeralfs, conglomerate, very deep	60	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	
Ultic Haploxeralfs, conglomerate, moderately deep	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") 20-
634:				
Ultic Haploxeralfs, conglomerate, very deep	60	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	
Ultic Haploxeralfs, conglomerate, moderately deep	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") 20-

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
635:				
Ultic Haploxeralfs, conglomerate, very deep	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	
Ultic Haploxeralfs, conglomerate, moderately deep	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") 20-
636:				
Ultic Haploxeralfs, conglomerate, moderately deep	50	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") 20-
Ultic Haploxeralfs, conglomerate, very deep	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	
637:				
Ultic Haploxeralfs, sandstone	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.09	
638:				
Ultic Haploxeralfs, sandstone	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
639:				
Ultic Haploxeralfs, sandstone-----	75	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	
640:				
Ultic Haploxeralfs, sandstone-----	75	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	
641:				
Ultic Haploxeralfs, sandstone-----	75	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	
642:				
Chinacamp gravelly loam-----------	70	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%
643:				
Chinacamp gravelly loam-----------	70	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	
644:				
Chinacamp gravelly loam-----------	70	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
645:				
Chinacamp gravelly loam----------	70	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	
646:				
Coalcanyon taxadjunct very gravelly loam----------	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%
				Fragments (>3") 20-
		Fragments (>3") 25 to 50%	0.30	Permeability .6-2"/ seepage)
647:				
Coalcanyon taxadjunct very gravelly loam----------	75	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Fragments (>3") 20-
		Slopes > 15%	1.00	Permeability .6-2"/
		Fragments (>3") 25 to 50%	0.30	seepage)
648:				
Coalcanyon taxadjunct very gravelly loam----------	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Fragments (>3") 20-
		Slopes > 15%	1.00	Permeability .6-2"/
		Fragments (>3") 25 to 50%	0.30	seepage)
649:				
Coalcanyon taxadjunct very gravelly loam----------	75	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Fragments (>3") 20-
		Slopes > 15%	1.00	Permeability .6-2"/
		Fragments (>3") 25 to 50%	0.30	seepage)
650:				
Schott very gravelly loam---------	65	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 3
				Slopes 2 to 8%
		Fragments (>3") 25 to 50%	0.97	Bedrock (hard) from
		Depth to bedrock 40 - 72"	0.78	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
651:				
Schott very gravelly loam---------	65	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 3
				Bedrock (hard) from
		Fragments (>3") 25 to 50%	0.97	
652:				
Schott very gravelly loam---------	65	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 3
				Bedrock (hard) from
		Fragments (>3") 25 to 50%	0.97	
Rock outcrop, mudflow breccia-----	20	Not rated		Not rated
654:				
Coridge bouldery loam-------------	70	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
				Bedrock (hard) < 40
		Depth to bedrock < 40"	1.00	Slopes 2 to 8%
		Saturation < 4' depth	1.00	
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated
655:				
Coridge bouldery loam-------------	70	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
				Bedrock (hard) < 40
		Depth to bedrock < 40"	1.00	Slopes > 8%
		Saturation < 4' depth	1.00	
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated
656:				
Rock outcrop, basalt cliffs-------	40	Not rated		Not rated
Coalcanyon taxadjunct very gravelly loam---------------------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Fragments (>3") 20-
		Slopes > 15%	1.00	Permeability .6-2"/
		Fragments (>3") 25 to 50%	0.30	seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
657:				
Bonneyridge sandy loam----------	35	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/h
				Slopes 2 to 8%
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/h
				Slopes 2 to 8%
		Seepage in bottom layer	1.00	
Rock outcrop, quartz diorite------	20	Not rated		Not rated
658:				
Bonneyridge sandy loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/h
Rock outcrop, quartz diorite------	25	Not rated		Not rated
659:				
Bonneyridge sandy loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/h
Rock outcrop, quartz diorite------	25	Not rated		Not rated
660:				
Bonneyridge sandy loam----------	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
660:				
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/h
Rock outcrop, quartz diorite------	30	Not rated		Not rated
661:				
Millerridge gravelly sandy clay loam----------	45	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40 Slopes 2 to 8%
		Depth to bedrock < 40"	1.00	Fragments (>3") 20-
Boxrobber cobbly sandy clay loam--	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Bedrock (soft) < 40 Slopes 2 to 8%
		Fragments (>3") 25 to 50%	0.02	
662:				
Millerridge gravelly sandy clay loam----------	45	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40 Slopes > 8%
		Depth to bedrock < 40"	1.00	Fragments (>3") 20-
		Slopes > 15%	1.00	
Boxrobber cobbly sandy clay loam--	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
663:				
Millerridge gravelly sandy clay loam----------	45	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40 Slopes > 8%
		Depth to bedrock < 40"	1.00	Fragments (>3") 20-
		Slopes > 15%	1.00	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
663:				
Boxrobber cobbly sandy clay loam--	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
664:				
Millerridge gravelly sandy clay loam----------	45	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) < 40
		Depth to bedrock < 40"	1.00	Slopes > 8%
		Slopes > 15%	1.00	Fragments (>3") 20-
Boxrobber cobbly sandy clay loam--	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
665:				
Surnuf gravelly loam----------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.01	
Bigridge loam----------	40	Limitations		Limitations
		Depth to bedrock 40 - 72"	0.75	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.02	Permeability > 2"/h
		Slopes 8 to 15%	0.01	Bedrock (soft) from
666:				
Surnuf gravelly loam----------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	
Bigridge loam----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.75	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.02	Bedrock (soft) from

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
667:				
Surnuf gravelly loam----------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	
Bigridge loam----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.75	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.02	Bedrock (soft) from
668:				
Surnuf gravelly loam----------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	
Bigridge loam----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.75	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.02	Bedrock (soft) from
669:				
Oroshore gravelly loam----------	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.03	Fragments (>3") 20-
Mounthope loam----------	25	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.69	Bedrock (soft) from
		Slopes 8 to 15%	0.01	Permeability .6-2"/ seepage)
Dunstone gravelly loam----------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Bedrock (soft) < 40
		Slopes 8 to 15%	0.01	Slopes > 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
670:				
Oroshore gravelly loam----------	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") 20-
Mounthope loam----------	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from Permeability .6-2"/
		Depth to bedrock 40 - 72"	0.69	seepage)
Dunstone gravelly loam----------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
671:				
Oroshore gravelly loam----------	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") 20-
Mounthope loam----------	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from Permeability .6-2"/
		Depth to bedrock 40 - 72"	0.69	seepage)
Dunstone gravelly loam----------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
672:				
Oroshore gravelly loam----------	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") 20-
Mounthope loam----------	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.69	Permeability .6-2"/ seepage)
Dunstone gravelly loam----------	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
674:				
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/h
Bonneyridge sandy loam----------	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
Rock outcrop, quartz diorite------	30	Not rated		Not rated
675:				
Clearhayes sandy clay loam--------	70	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Saturation < 4' depth	1.00	Permeability > 2"/h
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from
Hamslough clay----------	15	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Ponding (any durati
		Ponding (any duration)	1.00	Depth to pan < 40"

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
676:				
Carhart clay	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Ponding (any duration)	1.00	Ponding (any durati
Anita taxadjunct clay	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Bedrock (soft) < 40
		Saturation < 4' depth	1.00	Ponding (any durati
677:				
Tuscan gravelly loam	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Depth to pan < 40"	1.00	Bedrock (soft) < 40
		Saturation < 4' depth	1.00	Depth to pan < 40"
Fallager loam	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Bedrock (soft) < 40
		Depth to pan < 40"	1.00	Ponding (any durati
Anita, gravelly duripan	15	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Ponding (any duration)	1.00	Bedrock (soft) < 40
		Depth to pan < 40"	1.00	Ponding (any durati
679:				
Lucksev loam	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Saturation at < 3.5
		Saturation < 4' depth	1.00	Bedrock (soft) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes 2 to 8%
Butteside gravelly loam	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
679:				
Carhart clay----------	15	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Saturation < 4' depth	1.00	Slopes 2 to 8%
680:				
Lucksev loam----------	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	
Butteside gravelly loam----------	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	
683:				
Typic Haploxeralfs, magnesic, low elevation----------	50	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.01	Fragments (>3") 20-
Earlal very gravelly loam---------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") > 3
		Fragments (>3") 25 to 50%	0.44	Slopes > 8%
Rock outcrop, serpentinite--------	15	Not rated		Not rated
684:				
Typic Haploxeralfs, magnesic, low elevation----------	50	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") 20-

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
684:				
Earlal very gravelly loam---------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") > 3
Rock outcrop, serpentinite--------	15	Not rated		Not rated
685:				
Bosquejo taxadjunct, gravelly substratum----------	70	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Saturation at < 3.5
				Ponding (any durati
		Ponding (any duration)	1.00	Rare flooding
		Saturation < 4' depth	1.00	
686:				
Redsluff taxadjunct clay loam-----	70	Limitations		Limitations
		Saturation < 4' depth	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Rare flooding
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	
687:				
Xerorthents, shallow----------	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Bedrock (soft) < 40
				Slopes 2 to 8%
Typic Haploxeralfs gravelly loam--	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Bedrock (hard) < 40
		Depth to bedrock 40 - 72"	0.99	Bedrock (soft) < 40
		Slopes 8 to 15%	0.63	
700:				
Retsongulch very gravelly sandy loam----------	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
700:				
Flumewall gravelly sandy loam-----	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") > 3
701:				
Powellton gravelly loam-----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
Obstruction gravelly sandy loam---	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	
702:				
Cerpone gravelly loam-------------	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.43	Bedrock (hard) from
		Slopes 8 to 15%	0.37	Permeability .6-2"/ seepage)
Typic Haploxeralfs, magnesic, very gravelly loam---------------------	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.59	Bedrock (hard) from
		Slopes 8 to 15%	0.16	
Earlal very gravelly loam---------	15	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") > 3
		Fragments (>3") 25 to 50%	0.44	Slopes > 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
703:				
Cerpone gravelly loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (hard) from Permeability .6-2"/h
		Depth to bedrock 40 - 72"	0.43	seepage)
Typic Haploxeralfs, magnesic, very gravelly loam	30	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8% Bedrock (hard) from
		Slopes > 15%	1.00	
		Depth to bedrock 40 - 72"	0.59	
Earlal very gravelly loam	15	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40"
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") > 35
Rock outcrop, serpentinite	15	Not rated		Not rated
704:				
Typic Haploxeralfs, magnesic, very gravelly loam	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8% Bedrock (hard) from
		Slopes > 15%	1.00	
		Depth to bedrock 40 - 72"	0.59	
Earlal very gravelly loam	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40"
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") > 35
Cerpone gravelly loam	15	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (hard) from Permeability .6-2"/h
		Depth to bedrock 40 - 72"	0.43	seepage)
Rock outcrop, serpentinite	15	Not rated		Not rated

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
705:				
Typic Haploxeralfs, magnesic, very gravelly loam	35	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	Bedrock (hard) from
		Depth to bedrock 40 - 72"	0.59	
Earlal very gravelly loam	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") > 3
Cerpone gravelly loam	15	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (hard) from
		Depth to bedrock 40 - 72"	0.43	Permeability .6-2"/ seepage)
Rock outcrop, serpentinite	15	Not rated		Not rated
711:				
Dixmine very gravelly loam	45	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.61	Bedrock (soft) from
		Fragments (>3") 25 to 50%	0.01	Permeability .6-2"/ seepage)
Toadtown loam	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.01	Permeability .6-2"/ seepage)
712:				
Dixmine very gravelly loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.61	Permeability .6-2"/ seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
712:				
Toadtown loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
713:				
Dixmine very gravelly loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from Permeability .6-2"/
		Depth to bedrock 40 - 72"	0.61	seepage)
Toadtown loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
714:				
Dixmine very gravelly loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from Permeability .6-2"/
		Depth to bedrock 40 - 72"	0.61	seepage)
Toadtown loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
715:				
Logtrain gravelly loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.98	Bedrock (hard) from Permeability .6-2"/
		Depth to bedrock 40 - 72"	0.59	seepage)
Bottlehill very gravelly loam	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
				Permeability .6-2"/ seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
715:				
Walkermine very gravelly loam-----	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-
716:				
Griffgulch very gravelly silt loam	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 3
				Slopes 2 to 8%
		Fragments (>3") 25 to 50%	0.94	Bedrock (hard) from
		Depth to bedrock 40 - 72"	0.36	
Surnuf gravelly loam----------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.01	
717:				
Griffgulch very gravelly silt loam	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Fragments (>3") > 3
		Slopes > 15%	1.00	Bedrock (hard) from
		Fragments (>3") 25 to 50%	0.94	
Surnuf gravelly loam----------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	
718:				
Griffgulch very gravelly silt loam	35	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Fragments (>3") > 3
		Slopes > 15%	1.00	Bedrock (hard) from
		Fragments (>3") 25 to 50%	0.94	
Surnuf gravelly loam----------	35	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
718:				
Spine taxadjunct very cobbly loam	15	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40"
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") > 35
719:				
Griffgulch very gravelly silt loam	35	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Fragments (>3") > 35
		Slopes > 15%	1.00	Bedrock (hard) from
		Fragments (>3") 25 to 50%	0.94	
Surnuf gravelly loam----------	30	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	
Spine taxadjunct very cobbly loam	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40"
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") > 35
720:				
Dystroxerepts extremely gravelly loam----------	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40"
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Fragments (>3") > 35
Haploxeralfs very gravelly loam---	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") 20-3
				Bedrock (hard) from
		Fragments (>3") 25 to 50%	0.99	
Rock outcrop, metavolcanic--------	15	Not rated		Not rated

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
721:				
Haploxerands, granitic till, medial sandy loam	70	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Slopes 8 to 15%	0.96	Slopes > 8%
722:				
Haploxerands, granitic till, medial sandy loam	70	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr
723:				
Haploxerands, granitic till, medial sandy loam	70	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr
724:				
Haploxerands, volcanic till, cobbly medial sandy loam	75	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/hr Slopes > 8%
		Slopes 8 to 15%	0.16	Fragments (>3") 20-3
725:				
Haploxerands, volcanic till, cobbly medial sandy loam	75	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8% Permeability > 2"/hr
		Slopes > 15%	1.00	Fragments (>3") 20-3
726:				
Haploxerands, volcanic till, cobbly medial sandy loam	75	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8% Permeability > 2"/hr
		Slopes > 15%	1.00	Fragments (>3") 20-3
727:				
Bonneyridge sandy loam	85	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/hr
				Slopes 2 to 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
728:				
Bonneyridge sandy loam----------	85	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
729:				
Bonneyridge sandy loam----------	85	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
730:				
Tusccoll gravelly loam----------	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
Schott very gravelly loam---------	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 3
		Fragments (>3") 25 to 50%	0.97	Bedrock (hard) from
731:				
Tusccoll gravelly loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
Schott very gravelly loam---------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") > 3
		Fragments (>3") 25 to 50%	0.97	Bedrock (soft) from
732:				
Bonepile taxadjunct, duripan substratum----------	90	Limitations		Limitations
		Saturation < 4' depth	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/h
		Depth to pan 40 to 72"	0.89	Depth to pan from 4

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
733:				
Haploxeralfs, terrace, gravelly loam	75	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Fragments (>3") 20-
		Fragments (>3") 25 to 50%	0.99	Permeability .6-2"/ seepage)
734:				
Haploxerands medial sandy loam	55	Limitations		Limitations
		Slopes > 15%	1.00	Permeability > 2"/h
		Seepage in bottom layer	1.00	Slopes > 8%
Aquic Xerofluvents peaty very fine sandy loam	35	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Saturation < 4' depth	1.00	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.08	Saturation at < 3.5
735:				
Fluvaquents, loamy	80	Limitations		Limitations
		Saturation < 4' depth	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/h
		Rare flooding	0.40	Rare flooding
801:				
Obstruction gravelly sandy loam	70	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Slopes > 8%
		Slopes 8 to 15%	0.16	
802:				
Obskel very gravelly sandy loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.50	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.50	Bedrock (soft) from

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
802:				
Obstruction gravelly sandy loam---	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	
803:				
Obskel very gravelly sandy loam---	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.50	Permeability > 2"/hr
		Permeability from .6 to 2"/hr (slow perc)	0.50	Bedrock (soft) from
Obstruction gravelly sandy loam---	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	
804:				
Obskel very gravelly sandy loam---	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.50	Permeability > 2"/hr
		Permeability from .6 to 2"/hr (slow perc)	0.50	Bedrock (soft) from
Obstruction gravelly sandy loam---	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	
Retsongulch very gravelly sandy loam----------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40"
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
805:				
Bottlehill very gravelly loam-----	50	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
				Slopes 2 to 8%
				Permeability .6-2"/ seepage)
Walkermine very gravelly loam-----	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
				Fragments (>3") 20-
		Slopes 8 to 15%	0.84	
Logtrain gravelly loam----------	20	Limitations		Limitations
		Permeability from .6 to 2"/hr (slow perc)	0.98	Slopes 2 to 8%
				Bedrock (hard) from
		Depth to bedrock 40 - 72"	0.59	Permeability .6-2"/ seepage)
806:				
Bottlehill very gravelly loam-----	50	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
				Permeability .6-2"/ seepage)
Walkermine very gravelly loam-----	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-
Logtrain gravelly loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.98	Bedrock (hard) from
				Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.59	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
807:				
Bottlehill very gravelly loam-----	35	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
				Permeability .6-2"/ seepage)
Logtrain gravelly loam-----------	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.98	Bedrock (hard) from Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.59	
Walkermine very gravelly loam-----	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-
808:				
Bottlehill very gravelly loam-----	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
				Permeability .6-2"/ seepage)
Walkermine very gravelly loam-----	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-
Logtrain gravelly loam-----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.98	Bedrock (hard) from Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.59	
809:				
Walkermine very gravelly loam-----	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Fragments (>3") 20-

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
809:				
Bottlehill very gravelly loam-----	15	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
				Permeability .6-2"/
				seepage)
Logtrain gravelly loam----------	15	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr	0.98	Bedrock (hard) from
		(slow perc)		Permeability .6-2"/
		Depth to bedrock 40 - 72"	0.59	seepage)
Rock outcrop, metavolcanic--------	15	Not rated		Not rated
810:				
Dixmine very gravelly loam--------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60"	1.00	Bedrock (soft) from
		(slow perc)		Permeability .6-2"/
		Depth to bedrock 40 - 72"	0.61	seepage)
Mac gravelly loam-----------------	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60"	0.99	Permeability .6-2"/
		(slow perc)		seepage)
Spine very gravelly loam----------	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to	1.00	Permeability .6-2"/
		bedrock or hardpan		seepage)
811:				
Powellton gravelly loam----------	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60"	1.00	Slopes > 8%
		(slow perc)		Permeability .6-2"/
		Slopes > 15%	1.00	seepage)
Toadtown loam---------------------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60"	1.00	Slopes 2 to 8%
		(slow perc)		Permeability .6-2"/
				seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
812:				
Powellton gravelly loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
Toadtown loam----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
813:				
Powellton gravelly loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
Toadtown loam----------	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
814:				
Mountyana gravelly loam----------	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.16	Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.08	
815:				
Mountyana gravelly loam----------	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.08	
817:				
Lydon very gravelly medial coarse sandy loam----------	80	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Fragments (>3") 25 to 50%	0.02	Slopes 2 to 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
818:				
Lydon very gravelly medial coarse sandy loam	75	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
819:				
Lydon very gravelly medial coarse sandy loam	65	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
Rock outcrop, mudflow breccia	20	Not rated		Not rated
820:				
Lydon very gravelly medial coarse sandy loam	60	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
Rock outcrop, mudflow breccia	25	Not rated		Not rated
821:				
Lydon very gravelly medial coarse sandy loam	55	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
Rock outcrop, mudflow breccia	30	Not rated		Not rated
822:				
Bonepile gravelly medial loam	85	Limitations		Limitations
		Permeability from .6 to 2"/hr (slow perc)	0.98	Bedrock (soft) from Permeability .6-2"/
		Depth to bedrock 40 - 72"	0.96	seepage)
				Slopes 2 to 8%
823:				
Bonepile gravelly medial loam	85	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.98	Bedrock (soft) from Permeability .6-2"/
		Depth to bedrock 40 - 72"	0.96	seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
824:				
Beecee very gravelly medial loam--	85	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability .6-2"/h seepage)
825:				
Beecee very gravelly medial loam--	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability .6-2"/h seepage)
Lydon very gravelly medial coarse sandy loam----------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40'
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr
826:				
Redbone gravelly medial sandy loam	80	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Depth to bedrock 40 - 72"	0.57	Slopes > 8%
		Slopes 8 to 15%	0.16	Bedrock (soft) from
827:				
Redbone gravelly medial sandy loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Depth to bedrock 40 - 72"	0.57	Bedrock (soft) from
829:				
Paradiso loam----------	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%
				Permeability .6-2"/h seepage)
830:				
Paradiso loam----------	75	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Permeability .6-2"/h
		Slopes > 15%	1.00	seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
831:				
Surnuf gravelly loam----------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.01	
Bigridge loam----------	30	Limitations		Limitations
		Depth to bedrock 40 - 72"	0.75	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.02	Permeability > 2"/h
		Slopes 8 to 15%	0.01	Bedrock (soft) from
Spine very gravelly loam----------	15	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
		Slopes 8 to 15%	0.04	Permeability .6-2"/ seepage)
832:				
Surnuf gravelly loam----------	40	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	
Bigridge loam----------	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.75	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.02	Bedrock (soft) from
Spine very gravelly loam----------	15	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage)
833:				
Surnuf gravelly loam----------	60	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
833:				
Bigridge loam	15	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.75	Permeability > 2"/hr
		Permeability from .6 to 2"/hr (slow perc)	0.02	Bedrock (soft) from
Spine very gravelly loam	15	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40"
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/h seepage)
834:				
Hietanen gravelly loam	50	Limitations		Limitations
		Permeability from .6 to 2"/hr (slow perc)	0.98	Slopes 2 to 8%
		Depth to bedrock 40 - 72"	0.78	Bedrock (soft) from
				Permeability .6-2"/h seepage)
Mac gravelly loam	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40"
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Slopes 2 to 8%
				Permeability .6-2"/h seepage)
835:				
Hietanen gravelly loam	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.98	Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.78	Permeability .6-2"/h seepage)
Mac gravelly loam	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40"
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability .6-2"/h seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
836:				
Hietanen gravelly loam----------	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.98	Bedrock (soft) from Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.78	
Mac gravelly loam----------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability .6-2"/ seepage)
Spine very gravelly loam----------	15	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage)
837:				
Hietanen gravelly loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.98	Bedrock (soft) from Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.78	
Spine very gravelly loam----------	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/ seepage)
Mac gravelly loam----------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability .6-2"/ seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
838:				
Dixmine very gravelly loam--------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Bedrock (soft) from Permeability .6-2"/h seepage)
		Depth to bedrock 40 - 72"	0.61	
Spine very gravelly loam----------	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40'
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability .6-2"/h seepage)
Mac gravelly loam-----------------	25	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40'
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability .6-2"/h seepage)
839:				
Chawanakee gravelly sandy loam----	55	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40'
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/hr Slopes > 8%
		Seepage in bottom layer	1.00	
Billscabin gravelly sandy loam----	35	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Slopes 8 to 15%	0.16	Slopes > 8%
841:				
Billscabin gravelly sandy loam----	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr
Bonneyridge sandy loam------------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
842:				
Billscabin gravelly sandy loam----	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
Bonneyridge sandy loam----------	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
846:				
Bonneyridge sandy loam----------	60	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Slopes 8 to 15%	0.01	Slopes > 8%
Lewisflat loam----------	20	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.32	Slopes > 8%
		Slopes 8 to 15%	0.01	
847:				
Bonneyridge sandy loam----------	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
Lewisflat loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.32	
848:				
Bonneyridge sandy loam----------	60	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
Lewisflat loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Permeability from .6 to 2"/hr (slow perc)	0.32	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
850:				
Lewisflat loam	85	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Permeability from .6 to 2"/hr (slow perc)	0.32	Slopes 2 to 8%
851:				
Lewisflat loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Permeability from .6 to 2"/hr (slow perc)	0.32	
852:				
Lewisflat loam	75	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Permeability from .6 to 2"/hr (slow perc)	0.32	
860:				
Toadtown gravelly loam	60	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.01	
Powellton silt loam	20	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability .6-2"/h seepage)
		Slopes 8 to 15%	0.01	
861:				
Toadtown gravelly loam	60	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	
Powellton silt loam	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/h seepage)
		Seepage in bottom layer	1.00	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
862:				
Toadtown gravelly loam----------	60	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	
Powellton silt loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/h seepage)
		Seepage in bottom layer	1.00	
863:				
Toadtown gravelly loam----------	60	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	
Powellton silt loam----------	20	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability .6-2"/h seepage)
		Seepage in bottom layer	1.00	
880:				
Sites taxadjunct gravelly loam----	50	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.01	
Jocal taxadjunct gravelly loam----	35	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Slopes > 8%
		Depth to bedrock 40 - 72"	0.69	Permeability .6-2"/h seepage)
		Slopes 8 to 15%	0.01	Bedrock (soft) from
881:				
Sites taxadjunct gravelly loam----	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
881:				
Jocal taxadjunct gravelly loam----	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.69	Bedrock (soft) from
882:				
Sites taxadjunct gravelly loam----	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	
Jocal taxadjunct gravelly loam----	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.69	Bedrock (soft) from
883:				
Sites taxadjunct gravelly loam----	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	
Jocal taxadjunct gravelly loam----	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.69	Bedrock (soft) from
885:				
Rogerville silt loam----------	75	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.73	Bedrock (soft) from
		Slopes 8 to 15%	0.01	Permeability .6-2"/ seepage)
886:				
Rogerville silt loam----------	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes > 15%	1.00	Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.73	Permeability .6-2"/ seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
892:				
Rogerville silt loam	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Bedrock (soft) from
		Slopes > 15%	1.00	Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.73	
893:				
Rogerville silt loam	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
				Bedrock (soft) from
		Slopes > 15%	1.00	Permeability .6-2"/ seepage)
		Depth to bedrock 40 - 72"	0.73	
902:				
Lava flows, Lovejoy basalt	50	Not rated		Not rated
Lumpkin gravelly medial sandy loam	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/h
				Fragments (>3") > 3
		Fragments (>3") >50%	1.00	
903:				
Mudwash gravelly medial sandy loam	45	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/h
				Slopes > 8%
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	
		Slopes 8 to 15%	0.01	
Timberisland very gravelly medial sandy loam	25	Limitations		Limitations
		Slopes > 15%	1.00	Permeability > 2"/h
		Seepage in bottom layer	1.00	Slopes > 8%
		Depth to bedrock 40 - 72"	0.86	Bedrock (hard) from
Lavatop gravelly medial fine sandy loam	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Fragments (>3") 25 to 50%	0.01	Slopes > 8%
		Slopes 8 to 15%	0.01	Permeability > 2"/h

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
904:				
Lava flows, Lovejoy basalt--------	60	Not rated		Not rated
Lavatop gravelly medial fine sandy loam----------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Fragments (>3") 25 to 50%	0.01	Permeability > 2"/h
905:				
Lava flows, Lovejoy basalt--------	60	Not rated		Not rated
Lumpkin gravelly medial sandy loam	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/h
906:				
Lava flows, Lovejoy basalt--------	60	Not rated		Not rated
Lumpkin gravelly medial sandy loam	30	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	Permeability > 2"/h
911:				
Endoaquolls loam----------	75	Limitations		Limitations
		Flooding	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Frequent or occasio
		Saturation < 4' depth	1.00	Slopes 2 to 8%
923:				
Powderhouse medial sandy loam-----	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Slopes 8 to 15%	0.01	Slopes > 8%

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
923:				
McNair medial coarse sandy loam---	25	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Depth to bedrock 40 - 72"	0.41	Slopes > 8%
		Slopes 8 to 15%	0.01	Bedrock (soft) from
Greenwell medial sandy loam-------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes 8 to 15%	0.01	Permeability > 2"/h
				Slopes > 8%
924:				
Powderhouse medial sandy loam-----	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
McNair medial coarse sandy loam---	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Depth to bedrock 40 - 72"	0.41	Bedrock (soft) from
Greenwell medial sandy loam-------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
				Permeability > 2"/h
925:				
Powderhouse medial sandy loam-----	45	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
McNair medial coarse sandy loam---	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Depth to bedrock 40 - 72"	0.41	Bedrock (soft) from
Greenwell medial sandy loam-------	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
				Permeability > 2"/h

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
930:				
Shakeridge gravelly medial coarse sandy loam	50	Limitations		Limitations
		Slopes 8 to 15%	0.01	Permeability > 2"/h
				Slopes > 8%
Timberisland very gravelly medial sandy loam	40	Limitations		Limitations
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Depth to bedrock 40 - 72"	0.86	Slopes > 8%
		Fragments (>3") 25 to 50%	0.05	Bedrock (hard) from
931:				
Shakeridge gravelly medial coarse sandy loam	40	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
				Permeability > 2"/h
Mudwash gravelly medial sandy loam	25	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/h
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	
Timberisland very gravelly medial sandy loam	15	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
		Depth to bedrock 40 - 72"	0.86	Bedrock (hard) from
932:				
Shakeridge gravelly medial coarse sandy loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
				Permeability > 2"/h

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
932:				
Mudwash gravelly medial sandy loam	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/h
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	
933:				
Shakeridge gravelly medial coarse sandy loam	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
				Permeability > 2"/h
934:				
Mudwash gravelly medial sandy loam	80	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/h
				Slopes > 8%
		Permeability > 6"/hr in 24-60" (seepage and poor filter)	1.00	
		Slopes 8 to 15%	0.01	
939:				
Fluvaquentic Humaquepts very fine sandy loam	85	Limitations		Limitations
		Saturation < 4' depth	1.00	Saturation at < 3.5
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Permeability > 2"/h
				Rare flooding
		Rare flooding	0.40	
940:				
Dejonah gravelly loam	50	Limitations		Limitations
		Permeability from .6 to 2"/hr (slow perc)	0.32	Permeability > 2"/h
				Slopes > 8%
		Depth to bedrock 40 - 72"	0.01	
		Slopes 8 to 15%	0.01	

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
940:				
Stagpoint loam	30	Limitations		Limitations
		Seepage in bottom layer	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability .6-2"/ seepage)
		Fragments (>3") 25 to 50%	0.46	
941:				
Dejonah gravelly loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.32	Permeability > 2"/h
		Depth to bedrock 40 - 72"	0.01	
Stagpoint loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability .6-2"/ seepage)
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	
942:				
Stagpoint loam	50	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability .6-2"/ seepage)
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	
Dejonah gravelly loam	30	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.32	Permeability > 2"/h
		Depth to bedrock 40 - 72"	0.01	
948:				
Stagpoint loam	55	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability .6-2"/
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	seepage)

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
948:				
Dejonah gravelly loam----------	35	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability from .6 to 2"/hr (slow perc)	0.32	Permeability > 2"/hr
		Depth to bedrock 40 - 72"	0.01	
949:				
Rogerville taxadjunct fine sandy loam----------	80	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	0.99	Permeability > 2"/hr
				Bedrock (soft) from
		Depth to bedrock 40 - 72"	0.41	
950:				
Lumpkin taxadjunct very gravelly medial very fine sandy loam------	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40"
		Restricted permeability due to bedrock or hardpan	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	
Rock outcrop, olivine basalt, andesite, or mudflow----------	25	Not rated		Not rated
Powderhouse medial sandy loam-----	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40"
		Seepage in bottom layer	1.00	Permeability > 2"/hr
		Slopes 8 to 15%	0.01	Slopes > 8%
951:				
Lumpkin taxadjunct very gravelly medial very fine sandy loam------	40	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40"
		Slopes > 15%	1.00	Slopes > 8%
		Restricted permeability due to bedrock or hardpan	1.00	
Rock outcrop, andesite----------	25	Not rated		Not rated

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitat
951:				
Powderhouse medial sandy loam-----	20	Limitations		Limitations
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40
		Slopes > 15%	1.00	Slopes > 8%
		Seepage in bottom layer	1.00	Permeability > 2"/h
960:				
Surnuf gravelly loam, high elevation-----------	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes 2 to 8%
961:				
Surnuf gravelly loam, high elevation-----------	85	Limitations		Limitations
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	Slopes > 8%
		Slopes 8 to 15%	0.37	
962:				
Surnuf gravelly loam, high elevation-----------	85	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	
963:				
Surnuf gravelly loam, high elevation-----------	85	Limitations		Limitations
		Slopes > 15%	1.00	Slopes > 8%
		Permeability < .6"/hr in 24-60" (slow perc)	1.00	
990:				
Riverwash, frequently flooded-----	100	Limitations		Limitations
		Flooding	1.00	Frequent or occasio
		Saturation < 4' depth	1.00	Saturation at < 3.5

Table 17a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage
		Limitations	Value	Limitati
991:				
Xerofluvents sandy loam, frequently flooded	75	Limitations		Limitations
		Flooding	1.00	Frequent or occasion
		Saturation < 4' depth	1.00	Permeability > 2"/hr
		Seepage in bottom layer	1.00	Saturation from 3.5
995:				
Pits, gravel	100	Not rated		Not rated
996:				
Dumps, excavated material	100	Not rated		Not rated
997:				
Pits	95	Not rated		Not rated
998:				
Dumps, landfill	100	Not rated		Not rated
999:				
Water	100	Not rated		Not rated
DAM:				
Dam, manmade	100	Not rated		Not rated

The interpretation for septic tank absorption fields evaluates the following soil properties at variab
soil: flooding; ponding; wetness; slope; subsidence of organic soils; depth to hard or soft bedrock; depth
permeability that is too rapid, allowing seepage; and permeability that is too slow or an impermeable layer

The interpretation for sewage lagoons evaluates the following soil properties at variable depths in th
ponding, wetness, slope, organic Unified classes for low strength (PT, OL, and OH), depth to hard or soft b
cemented pan, fragments larger than 3 inches in size, and permeability that is too rapid, allowing seepage.

Table 17b.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite inves
The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limita
based on the limitation with the highest value. Only the three highest value limitations are listed. There may b
Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria ar
abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
100:						
Anita clay	60	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Depth to pan < 40"	1.00	Depth to pan
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Saturation <
Galt clay	25	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Depth to pan < 40"	1.00	Depth to pan
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Saturation <
104:						
Bosquejo clay	85	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Silty clay c
		Rare flooding	0.50	Rare flooding	0.40	Saturation f depth
105:						
Busacca clay loam	85	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Silt or clay 10-60"
		Rare flooding	0.50	Rare flooding	0.40	Clay loam, s silty clay
108:						
Tuscan gravelly loam	45	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation <
						Silty clay c

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
108:						
Igo gravelly loam-------	20	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Clay loam, silty clay, silty clay loam	0.50	Saturation < 5' depth	1.00	Saturation < Silt or clay 10-60"
Anita clay--------------	15	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation <
109:						
Bosquejo clay loam------	85	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Saturation f
		Rare flooding	0.50	Rare flooding	0.40	depth
110:						
Bosquejo silt loam, overwash, occasionally flooded----------	90	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Silty clay c
		Ponding (any duration)	1.00	Occasional flooding	0.60	Packing (OL,
111yu:						
Auburn loam-------------	40	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bed
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes 8 to
Sobrante loam-----------	40	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bed
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes 8 to
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
114yu:						
Auburn gravelly loam----	40	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bed
				Slopes 8 to 15%	0.63	Slopes 8 to
		Slopes 8 to 15%	0.63			Fragments (<
Sobrante gravelly loam--	40	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bed
				Slopes 8 to 15%	0.63	Slopes 8 to
		Slopes 8 to 15%	0.63			Silt or clay
		Clay loam, silty clay, silty clay loam	0.50			10-60"
118:						
Xerorthents, tailings---	80	Not rated		Limitations		Not rated
				Seepage in 20-40" depth	1.00	
				Occasional flooding	0.60	
118co:						
Clear Lake clay, frequently flooded-----	90	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Saturation < 5' depth	1.00	Silty clay c
		Saturation < 6' depth	1.00	Frequent flooding	0.80	Packing (OL,
		Clay or silty clay	1.00			Clay or silt
119:						
Xerorthents, tailings---	70	Not rated		Limitations		Not rated
				Seepage in 20-40" depth	1.00	
				Occasional flooding	0.60	
Urban land----------	30	Not rated		Not rated		Not rated
119yu:						
Auburn gravelly loam----	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
						Fragments (<

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
119yu:						
Sobrante gravelly loam--	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
Rock outcrop----------	20	Not rated		Not rated		Not rated
120:						
Gridley taxadjunct clay loam----------	80	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Rare flooding	0.50	Saturation < 5' depth	1.00	Saturation <
121:						
Boga loam----------	45	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Silt or clay 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, s silty clay
Loemstone loam----------	40	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Saturation f depth
121su:						
Columbia fine sandy loam, frequently flooded----------	80	Limitations		Limitations		Suited
		Flooding >= occasional	1.00	Saturation < 5' depth	1.00	Permeability
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	
		Seepage in bottom layer	1.00	Frequent flooding	0.80	
125:						
Gridley taxadjunct loam	65	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Rare flooding	0.50	Saturation < 5' depth	1.00	Saturation <

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
125:						
Calcic Haploxerolls						
sandy loam----------	20	Limitations		Limitations		Suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation
		Rare flooding	0.50	Seepage in 20-40" depth	1.00	depth
				Rare flooding	0.40	
126:						
Liveoak sandy loam------	85	Limitations		Limitations		Suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	depth
				Very rare flooding	0.20	Permeabilit
127:						
Gridley taxadjunct loam	85	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Rare flooding	0.50	Saturation < 5' depth	1.00	Saturation
130:						
Eastbiggs loam----------	80	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation
		Depth to thin cemented pan	0.50			Silty clay
133:						
Eastbiggs loam----------	50	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation
		Depth to thin cemented pan	0.50			Silty clay
Galt clay loam----------	40	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Clay loam, silty clay, silty clay loam	0.50	Saturation < 5' depth	1.00	Saturation
136:						
Duric Xerarents, cut----	35	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
136:						
Duric Xerarents, fill---	30	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Depth to par
		Depth to thin cemented pan	0.50	Seepage in 20-40" depth	1.00	Permeability
Eastbiggs fine sandy loam, leveled----------	25	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to par
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Depth to thin cemented pan	0.50	Saturation < 5' depth	1.00	Saturation <
138su:						
Liveoak sandy clay loam	85	Limitations		Limitations		Suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation f
				Very rare flooding	0.20	depth
139su:						
Liveoak taxadjunct loam, frequently flooded----------	45	Limitations		Limitations		Suited
		Flooding >= occasional	1.00	Saturation < 5' depth	1.00	Depth to par
		Saturation < 6' depth	1.00	Frequent flooding	0.80	
		Depth to thin cemented pan	0.50	Depth to pan 40-60"	0.14	
Galt taxadjunct clay loam, frequently flooded----------	40	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Depth to pan < 40"	1.00	Depth to par
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation <
		Clay loam, silty clay, silty clay loam	0.50	Frequent flooding	0.80	Silt or clay 10-60"
143su:						
Marcum clay loam--------	45	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.94	Silty clay c
						Packing (OL,
		Clay or silty clay	1.00			Clay or silt
Gridley clay loam-------	40	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bed
						Silty clay c
		Clay or silty clay	1.00			Packing (OL,

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
149yu:						
Flanly sandy loam-------	80	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes 8 to
150:						
Columbia stratified sand to fine sandy loam	85	Limitations		Limitations		Suited
		Flooding >= occasional	1.00	Saturation < 5' depth	1.00	Permeabilit
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	Saturation
		Seepage in bottom layer	1.00	Frequent flooding	0.80	depth
150su:						
Olashes sandy loam------	85	Limitations		No limitations		Suited
		Seepage in bottom layer	1.00			
151yu:						
Flanly sandy loam-------	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
152:						
Gianella fine sandy loam, frequently flooded----------	85	Limitations		Limitations		Suited
		Flooding >= occasional	1.00	Seepage in 20-40" depth	1.00	Permeabilit
		Seepage in bottom layer	1.00	Frequent flooding	0.80	
153:						
Gianella sandy loam, frequently flooded-----	85	Limitations		Limitations		Suited
		Flooding >= occasional	1.00	Seepage in 20-40" depth	1.00	Permeabilit
		Seepage in bottom layer	1.00	Frequent flooding	0.80	
154:						
Gianella silt loam, frequently flooded-----	85	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Seepage in 20-40" depth	1.00	Permeabilit
		Seepage in bottom layer	1.00	Frequent flooding	0.80	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
158:						
Gianella fine sandy loam, occasionally flooded	85	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Seepage in 20-40" depth	1.00	Permeability
		Seepage in bottom layer	1.00	Occasional flooding	0.60	
160:						
Gianella loam, occasionally flooded	85	Limitations		Limitations		Suited
		Flooding >= occasional	1.00	Seepage in 20-40" depth	1.00	Permeability
		Seepage in bottom layer	1.00	Occasional flooding	0.60	
161:						
Gianella fine sandy loam, rarely flooded	90	Limitations		Limitations		Not suited
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
		Rare flooding	0.50	Rare flooding	0.40	
162:						
Gianella loam, rarely flooded	90	Limitations		Limitations		Suited
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
		Rare flooding	0.50	Rare flooding	0.40	
163yu:						
Holillipah loamy sand	85	Limitations		Limitations		Suited
		Flooding >= occasional	1.00	Seepage in 20-40" depth	1.00	Permeability
		Seepage in bottom layer	1.00	Frequent flooding	0.80	
165yu:						
Holland loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
						Clay loam, s silty clay
Hoda loam	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Packing (OL,
						Slopes > 15%
						Silt or clay 10-60"

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
165yu:						
Hotaw loam	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
				Slopes > 15%	1.00	Slopes > 15
		Slopes > 15%	1.00			
173yu:						
Hotaw loam	45	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
				Slopes > 15%	1.00	Slopes > 15
		Slopes > 15%	1.00			
Chawanakee gravelly sandy loam	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
				Slopes > 15%	1.00	Slopes > 15
		Seepage in bottom layer	1.00			Permeabilit
		Slopes > 15%	1.00			
Holland loam	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60" Clay loam, silty clay
175:						
Farwell clay loam, rarely flooded	85	Limitations		Limitations		Suited
		Rare flooding	0.50	Rare flooding	0.40	Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
176:						
Farwell loam, occasionally flooded	85	Limitations		Limitations		Suited
		Flooding >= occasional	1.00	Occasional flooding	0.60	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
176yu:						
Jocal loam----------	80	Limitations		Limitations		Suited
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes 8 to
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
						Clay loam, s silty clay
177:						
Farwell silt loam, occasionally flooded---	85	Limitations		Limitations		Suited
		Flooding >= occasional	1.00	Seepage in 20-40" depth	1.00	Clay loam, s
		Seepage in bottom layer	1.00	Occasional flooding	0.60	silty clay
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
						Permeability
178:						
Arbuckle gravelly loam--	87	Limitations		Limitations		Suited
		Rare flooding	0.50	Rare flooding	0.40	Fragments (<
179:						
Moda taxadjunct loam----	65	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation <
Arbuckle gravelly loam--	20	Limitations		Limitations		Suited
		Rare flooding	0.50	Rare flooding	0.40	Fragments (<
180:						
Dodgeland silty clay loam, occasionally flooded----------	85	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation <
		Ponding (any duration)	1.00	Occasional flooding	0.60	Silty clay c

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
181:						
Dodgeland silty clay loam, frequently flooded	80	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation
		Ponding (any duration)	1.00	Frequent flooding	0.80	Silty clay
188yu:						
Mariposa taxadjunct gravelly loam	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60"
189:						
Esquon silt loam, overwash	90	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Silty clay
		Clay or silty clay	1.00	Rare flooding	0.40	Packing (OI
189yu:						
Mariposa taxadjunct gravelly loam	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60"
196yu:						
Mildred cobbly loam	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
200:						
Parrott silt loam, occasionally flooded---	85	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 6' depth	1.00	Occasional flooding	0.60	Permeabilit
		Ponding (any duration)	1.00			
201:						
Parrott silt loam, frequently flooded-----	85	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 6' depth	1.00	Frequent flooding	0.80	Permeabilit
		Ponding (any duration)	1.00			
203:						
Kusalslough silty clay loam, occasionally flooded----------	85	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Silty clay
		Ponding (any duration)	1.00	Occasional flooding	0.60	Packing (OI
205:						
Parrott silt loam, frequently flooded-----	50	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 6' depth	1.00	Frequent flooding	0.80	Permeabilit
		Ponding (any duration)	1.00			
Vermet silt loam, frequently flooded-----	35	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation
		Ponding (any duration)	1.00	Frequent flooding	0.80	Silt or cla 10-60"
206:						
Islandbar sandy loam----	60	Limitations		Limitations		Not suited
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes 8 to

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
206:						
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
				Slopes 8 to 15%	0.01	Permeabilit
		Seepage in bottom layer	1.00			Fragments (
		Slopes 8 to 15%	0.01			
207:						
Islandbar sandy loam	60	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Seepage in bottom layer	1.00			Permeabilit
208:						
Islandbar sandy loam	60	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Seepage in bottom layer	1.00			Permeabilit
209:						
Islandbar sandy loam	60	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Seepage in bottom layer	1.00			Permeabilit

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
210:						
Featherfalls sandy loam	50	Limitations		Limitations		Suited
		Fragments (3-10") 15-35%	0.10	Slopes 8 to 15%	0.01	Slopes 8 to
		Slopes 8 to 15%	0.01			
Islandbar sandy loam----	35	Limitations		Limitations		Not suited
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes 8 to
211:						
Featherfalls sandy loam	55	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Fragments (3-10") 15-35%	0.10			
Islandbar sandy loam----	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
212:						
Featherfalls sandy loam	55	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Fragments (3-10") 15-35%	0.10			
Islandbar sandy loam----	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
213:						
Featherfalls sandy loam	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Fragments (3-10") 15-35%	0.10			
Islandbar sandy loam----	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
214:						
Crystalhill gravelly coarse sandy loam------	35	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Permeability
		Seepage in bottom layer	1.00	Slopes 8 to 15%	0.16	Slopes 8 to
		Slopes 8 to 15%	0.16			

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
214:						
Oregongulch gravelly sandy loam	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Fragments (<
				Bedrock depth < 40"	1.00	Depth to bed
		Seepage in bottom layer	1.00	Slopes 8 to 15%	0.16	Slopes 8 to
		Slopes 8 to 15%	0.16			
Craigsaddle coarse sandy loam	20	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bed
				Bedrock depth from 40-60"	0.01	
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated
215:						
Crystalhill gravelly coarse sandy loam	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Permeability
		Seepage in bottom layer	1.00			
Oregongulch gravelly sandy loam	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (<
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bed
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
Craigsaddle coarse sandy loam	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bed
				Bedrock depth from 40-60"	0.01	
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
216:						
Crystalhill gravelly coarse sandy loam------	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Permeability
		Seepage in bottom layer	1.00			
Oregongulch gravelly sandy loam----------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (<
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bed
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
Craigsaddle coarse sandy loam----------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bed
				Bedrock depth from 40-60"	0.01	
Rock outcrop, trondhjemite----------	10	Not rated		Not rated		Not rated
217:						
Crystalhill gravelly coarse sandy loam------	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Permeability
		Seepage in bottom layer	1.00			
Oregongulch gravelly sandy loam----------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (<
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bed
		Seepage in bottom layer	1.00	Bedrock depth < 40"	1.00	Slopes > 15%

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
217:						
Craigsaddle coarse sandy loam	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bed
				Bedrock depth from 40-60"	0.01	
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated
218:						
Rock outcrop, quartz diorite	60	Not rated		Not rated		Not rated
Lithic Xerorthents gravelly sandy loam	20	Limitations		Limitations		Not rated
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	
		Seepage in bottom layer	1.00	Slopes > 15%	1.00	
		Slopes > 15%	1.00			
Chawanakee gravelly sandy loam	15	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bed
		Seepage in bottom layer	1.00	Slopes > 15%	1.00	Slopes > 15%
		Slopes > 15%	1.00			Permeability
219:						
Rock outcrop, quartz diorite	60	Not rated		Not rated		Not rated
Lithic Xerorthents gravelly sandy loam	20	Limitations		Limitations		Not rated
		Slopes > 15%	1.00	Slopes > 15%	1.00	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	
		Seepage in bottom layer	1.00			

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
219:						
Chawanakee gravelly sandy loam	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		Seepage in bottom layer	1.00			Permeability
220:						
Esquon clay, frequently flooded	60	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Silty clay c
		Ponding (any duration)	1.00	Frequent flooding	0.80	Packing (OL,
Clear Lake silty clay loam, overwash	30	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation <
		Ponding (any duration)	1.00	Frequent flooding	0.80	Silty clay c
221yu:						
Sites loam	85	Limitations		No limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00			Silty clay c
		Clay or silty clay	1.00			Packing (OL,
						Clay or silt
222yu:						
Sites loam	85	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Slopes 8 to 15%	0.63	Silty clay c
		Clay or silty clay	1.00			Packing (OL,
		Slopes 8 to 15%	0.63			Clay or silt
225yu:						
Sites gravelly loam, bedrock substratum	80	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.18	Packing (OL,
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
						Clay loam, s silty clay

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
226yu:						
Sites gravelly loam, bedrock substratum-----	80	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Slopes 8 to 15%	0.63	Packing (OL,
		Slopes 8 to 15%	0.63	Bedrock depth from 40-60"	0.18	Slopes 8 to
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
227yu:						
Sites gravelly loam, bedrock substratum-----	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.18	Packing (OL,
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
242yu:						
Surnuf loam----------	80	Limitations		Limitations		Suited
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes 8 to
243yu:						
Surnuf loam----------	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
244yu:						
Surnuf loam----------	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
245:						
Surnuf loam----------	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
248yu:						
Trainer loam----------	85	Limitations		Limitations		Suited
		Flooding >= occasional	1.00	Saturation < 5' depth	1.00	Permeability
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	
		Seepage in bottom layer	1.00	Occasional flooding	0.60	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
250:						
Llanoseco, occasionally flooded	90	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 6' depth	1.00	Occasional flooding	0.60	Silty clay c
		Ponding (any duration)	1.00			Packing (OL,
252:						
Whitecabin silty clay, occasionally flooded	60	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Silty clay c
		Ponding (any duration)	1.00	Occasional flooding	0.60	Packing (OL,
Ordferry silty clay, occasionally flooded	25	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Depth to pan < 40"	1.00	Depth to pan
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Saturation <
252yu:						
Woodleaf gravelly loam	80	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bed
				Slopes 8 to 15%	0.04	Silt or clay 10-60"
		Fragments (3-10") 15-35%	0.66			
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, s silty clay
253yu:						
Woodleaf gravelly loam	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
						Silt or clay 10-60"
		Fragments (3-10") 15-35%	0.66			
255:						
Whitecabin silty clay loam, occasionally flooded	60	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Silty clay c
		Ponding (any duration)	1.00	Depth to pan 40-60"	0.88	Packing (OL,

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
255:						
Ordferry silty clay, occasionally flooded---	30	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Depth to pan < 40"	1.00	Depth to pa
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Saturation
256:						
Whitecabin silt loam, occasionally flooded---	85	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Silty clay
		Ponding (any duration)	1.00	Occasional flooding	0.60	Packing (OI
257:						
Llanoseco, frequently flooded----------	90	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 6' depth	1.00	Frequent flooding	0.80	Silty clay
		Ponding (any duration)	1.00			Packing (OI
258:						
Codora, occasionally flooded----------	85	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Silt or cla
		Ponding (any duration)	1.00	Occasional flooding	0.60	10-60"
						Clay loam,
						silty clay
260:						
Ordferry silty clay, occasionally flooded---	90	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Depth to pan < 40"	1.00	Depth to pa
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Saturation
280:						
Columbia taxadjunct stratified very fine sandy loam----------	80	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Saturation < 5' depth	1.00	Saturation
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	Permeabilit
		Seepage in bottom layer	1.00	Frequent flooding	0.80	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
290:						
Perkins gravelly loam---	90	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	Fragments (
		Seepage in bottom layer	1.00			Permeabilit
300:						
Redsluff gravelly loam--	80	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Permeabilit
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Sandy textu
		Rare flooding	0.50	Rare flooding	0.40	Fragments (
301:						
Wafap gravelly loam-----	70	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation
		Fragments (3-10") > 35%	1.00	Depth to pan 40-60"	0.77	Packing (OL
		Rare flooding	0.50	Rare flooding	0.40	Fragments (
Hamslough clay----------	15	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Depth to pan < 40"	1.00	Depth to pa
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Saturation
302:						
Redtough loam----------	50	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Fragments (3-10") 15-35%	0.30	Saturation < 5' depth	1.00	Saturation
Redswale cobbly loam----	35	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Fragments (3-10") > 35%	1.00	Saturation < 5' depth	1.00	Saturation
303:						
Munjar gravelly loam----	60	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Fragments (3-10") 15-35%	0.61	Saturation < 5' depth	1.00	Saturation
		Clay loam, silty clay, silty clay loam	0.50			depth Silt or cla
						10-60"

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
303:						
Tuscan taxadjunct gravelly clay loam-----	20	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Clay loam, silty clay, silty clay loam	0.50	Saturation < 5' depth	1.00	Saturation Packing (OI
Galt clay----------	10	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation
304:						
Redtough loam----------	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Depth to pan < 40"	1.00	Depth to pa
		Fragments (3-10") 15-35%	0.30	Slopes > 15%	1.00	Slopes > 15
305:						
Redtough gravelly loam--	45	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Clay loam, silty clay, silty clay loam	0.50	Saturation < 5' depth	1.00	Saturation Silt or cla 10-60"
Redswale loam----------	25	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
				Saturation < 5' depth	1.00	Saturation
Anita, gravelly duripan	20	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation
306:						
Duric Xerarents, fill---	50	Not rated		Limitations		Not rated
				Ponding (any duration)	1.00	
				Saturation < 5' depth	1.00	
				Depth to pan < 40"	0.99	
Duric Xerarents, cut----	40	Not rated		Limitations		Not rated
				Depth to pan < 40"	1.00	
				Ponding (any duration)	1.00	
				Saturation < 5' depth	1.00	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
307:						
Duric Xerarents clay loam, leveled----------	70	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation <
310:						
Kimball loam----------	85	No limitations		No limitations		Suited
317:						
Thompsonflat loam-------	75	Limitations		No limitations		Suited
		Saturation < 6' depth	1.00			Fragments (<
318:						
Thompsonflat fine sandy loam----------	50	Limitations		No limitations		Suited
		Saturation < 6' depth	1.00			Fragments (<
		Fragments (3-10") 15-35%	0.06			
Oroville gravelly fine sandy loam----------	40	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Clay loam, silty clay, silty clay loam	0.50	Saturation < 5' depth	1.00	Saturation <
320:						
Vistarobles sandy loam--	50	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation <
Redding loam----------	40	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
				Saturation < 5' depth	1.00	Saturation f depth

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
321:						
Durixeralfs, fine-loamy, gravelly fine sandy loam	50	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Lithic or paralithic bedrock < 72"	1.00	Saturation < 5' depth	1.00	Saturation depth
		Depth to thin cemented pan	0.50	Bedrock depth from 40-60"	0.82	Depth to be
Durixeralfs, loamy-skeletal, gravelly fine sandy loam	20	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Saturation < 5' depth	1.00	Ponding (an
Typic Petraquepts silty clay	15	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Saturation < 5' depth	1.00	Ponding (an
330:						
Wilsoncreek loam, occasionally flooded	60	Limitations		Limitations		Suited
		Flooding >= occasional	1.00	Saturation < 5' depth	1.00	
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	
				Occasional flooding	0.60	
Trainer loam, occasionally flooded	25	Limitations		Limitations		Suited
		Flooding >= occasional	1.00	Saturation < 5' depth	1.00	Saturation depth
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	
		Seepage in bottom layer	1.00	Occasional flooding	0.60	Permeabilit
331:						
Thompsonflat loam	85	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Slopes > 15%	1.00	Slopes > 15
		Slopes > 15%	1.00			Fragments (

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
335:						
Galt clay loam----------	85	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Clay loam, silty clay, silty clay loam	0.50	Saturation < 5' depth	1.00	Saturation <
336:						
Galt clay----------	90	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation <
337:						
Galt clay loam----------	85	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Clay loam, silty clay, silty clay loam	0.50	Saturation < 5' depth	1.00	Saturation <
338:						
Oxyaquic Xerofluvents silt loam----------	90	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Permeability
		Rare flooding	0.50	Seepage in 20-40" depth	1.00	Sandy textur
339:						
Oxyaquic Xerofluvents sandy loam, frequently flooded----------	90	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Permeability
		Ponding (any duration)	1.00	Seepage in 20-40" depth	1.00	Saturation f depth
340:						
Rock outcrop, Lovejoy basalt----------	35	Not rated		Not rated		Not rated

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
340:						
Thermalrocks very gravelly loam----------	25	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Fragments (3-10") 15-35%	0.50			Fragments (
Campbellhills gravelly loam--------------------	20	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.42	Saturation
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60"
341:						
Elsey loam--------------	25	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation
		Fragments (3-10") 15-35%	0.90			Fragments (
Beatsonhollow gravelly loam--------------------	25	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Depth to be
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Ponding (an
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation
Campbellhills gravelly loam--------------------	20	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.42	Saturation
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60"
Rock outcrop, Lovejoy basalt-----------------	20	Not rated		Not rated		Not rated

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
342:						
Thermalrocks very gravelly loam----------	40	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bed
				Slopes > 15%	1.00	Slopes > 15%
		Slopes > 15%	1.00			Fragments (<
		Fragments (3-10") 15-35%	0.50			
Beatsonhollow taxadjunct fine sandy loam-------------------	35	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation <
						Fragments (<
Rock outcrop, Lovejoy basalt-----------------	15	Not rated		Not rated		Not rated
343:						
Coalcanyon very cobbly loam-------------------	50	Limitations		Limitations		Not suited
		Fragments (3-10") > 35%	1.00	Slopes 8 to 15%	0.16	Fragments (>
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, s silty clay
		Slopes 8 to 15%	0.16			Silt or clay 10-60"
Coonhollow gravelly loam-------------------	35	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.84	Fragments (>
				Slopes 8 to 15%	0.16	Depth to bed
		Fragments (3-10") > 35%	1.00			Silt or clay 10-60"
		Clay loam, silty clay, silty clay loam	0.50			
344:						
Coalcanyon very cobbly loam-------------------	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Fragments (3-10") > 35%	1.00			Fragments (>
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, s silty clay

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
344:						
Coonhollow gravelly loam	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.84	Fragments (
		Fragments (3-10") > 35%	1.00			Depth to be
Rock outcrop, Lovejoy basalt	15	Not rated		Not rated		Not rated
346:						
Cherotable loam	50	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Silty clay
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.84	Packing (OI
		Clay or silty clay	1.00			Clay or sil
Elsey loam	35	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation
		Fragments (3-10") 15-35%	0.90			Fragments (
347:						
Haplic Palexeralfs loam	90	Limitations		Limitations		Suited
		Flooding >= occasional	1.00	Occasional flooding	0.60	Fragments (
		Fragments (3-10") 15-35%	0.18			Fragments (
353:						
Cherokeespring gravelly silt loam	80	Limitations		Limitations		Not suited
		Clay or silty clay	1.00	Slopes 8 to 15%	0.63	Silty clay
		Slopes 8 to 15%	0.63			Packing (OI
						Clay or sil
355:						
Coalcanyon very cobbly loam	55	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Fragments (3-10") > 35%	1.00			Fragments (
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
355:						
Talus	35	Not rated		Not rated		Not rated
356:						
Coalcanyon very cobbly loam	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Fragments (3-10") > 35%	1.00			Fragments (>
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, s silty clay
Rock outcrop, basalt cliffs	20	Not rated		Not rated		Not rated
Talus	20	Not rated		Not rated		Not rated
Coonhollow gravelly loam	10	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.84	Fragments (> Depth to bed
		Fragments (3-10") > 35%	1.00			
360:						
Typic Xerofluvents, coarse-loamy	45	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Permeability
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (<
		Rare flooding	0.50	Rare flooding	0.40	Saturation f depth
Typic Xerofluvents, sandy-skeletal	40	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Fragments (<
		Sandy textures	1.00	Seepage in 20-40" depth	1.00	Sandy textur
		Seepage in bottom layer	1.00	Rare flooding	0.40	Permeability

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
361:						
Typic Xerofluvents, sandy-skeletal---------	85	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Fragments (<
		Sandy textures	1.00	Seepage in 20-40" depth	1.00	Sandy textur
		Seepage in bottom layer	1.00	Rare flooding	0.40	Permeability
362:						
Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	Limitations		No limitations		Suited
		Seepage in bottom layer	1.00			Permeability
Ultic Haploxeralfs, sandstone, low elevation, deep--------	25	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bed
				Bedrock depth from 40-60"	0.99	Permeability
363:						
Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	Limitations		No limitations		Suited
		Seepage in bottom layer	1.00			Permeability
Ultic Haploxeralfs, sandstone, low elevation, deep--------	30	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bed
				Bedrock depth from 40-60"	0.99	Slopes 8 to
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Permeability
364:						
Ultic Haploxeralfs, sandstone, low elevation, deep--------	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Depth to bed
				Bedrock depth from 40-60"	0.99	Permeability

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
364:						
Ultic Haploxeralfs, sandstone, low elevation, very deep---	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Seepage in bottom layer	1.00			Permeabilit
365:						
Palexerults gravelly loam----------	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00			Packing (OL Silt or cla 10-60"
366:						
Palexerults gravelly loam----------	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00			Packing (OL Silt or cla 10-60"
370:						
Palexerults gravelly loam----------	80	Limitations		No limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00			Packing (OL Silt or cla 10-60"
375:						
Wickscorner loam--------	80	Limitations		No limitations		Not suited
		Saturation < 6' depth	1.00			Fragments (
		Clay or silty clay	1.00			Silty clay Clay or sil
376:						
Flagcanyon gravelly loam----------	50	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Clay loam, silty clay, silty clay loam	0.50	Saturation < 5' depth	1.00	Saturation depth
		Depth to thin cemented pan	0.50			Fragments (

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
376:						
Wickscorner loam--------	35	Limitations		No limitations		Not suited
		Saturation < 6' depth	1.00			Fragments (
		Clay or silty clay	1.00			Silty clay
						Clay or sil
377:						
Flagcanyon taxadjunct fine sandy loam--------	55	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation
Durixeralfs, clayey-skeletal, loam---------	20	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation
Duraquerts gravelly clay-------------------	15	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation
400:						
Subaco taxadjunct clay--	85	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Silty clay
415:						
Ignord fine sandy loam--	90	Limitations		Limitations		Suited
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
		Rare flooding	0.50	Rare flooding	0.40	
416:						
Calcic Haploxerolls sandy loam-------------	90	Limitations		Limitations		Suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation
		Rare flooding	0.50	Seepage in 20-40" depth	1.00	depth
				Rare flooding	0.40	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
418:						
Almendra loam----------	85	No limitations		No limitations		Suited
419:						
Conejo fine sandy loam, overwash----------	85	Limitations		No limitations		Suited
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60" Clay loam, silty clay
420:						
Conejo clay loam--------	85	No limitations		No limitations		Suited
						Silt or cla 10-60"
425:						
Vina fine sandy loam----	85	Limitations		Limitations		Not suited
		Sandy textures	1.00	Seepage in 20-40" depth	1.00	Sandy textu
		Seepage in bottom layer	1.00	Rare flooding	0.40	Permeabilit
		Rare flooding	0.50			
426:						
Vina loam----------	85	No limitations		No limitations		Suited
439:						
Oxyaquic Xerofluvents clay----------	85	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Silty clay
		Ponding (any duration)	1.00	Seepage in 20-40" depth	1.00	Packing (OL
440:						
Oxyaquic Xerofluvents silt loam, frequently flooded----------	80	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation
		Ponding (any duration)	1.00	Seepage in 20-40" depth	1.00	depth

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
441:						
Oxyaquic Xerofluvents very fine sandy loam---	90	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Saturation
		Rare flooding	0.50	Seepage in 20-40" depth	1.00	depth
442:						
Durixerolls clay loam---	55	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Rare flooding	0.50	Saturation < 5' depth	1.00	Saturation
Haploxerolls clay loam--	30	Limitations		Limitations		Suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation
		Rare flooding	0.50	Rare flooding	0.40	depth
				Depth to pan 40-60"	0.02	Depth to pa
443:						
Durixerolls loam--------	60	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Rare flooding	0.50	Saturation < 5' depth	1.00	Saturation
				Rare flooding	0.40	
Haploxerolls loam-------	25	Limitations		Limitations		Suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation
		Seepage in bottom layer	1.00	Rare flooding	0.40	depth
		Rare flooding	0.50	Depth to pan 40-60"	0.26	Depth to pa
445:						
Chico loam--------------	85	No limitations		No limitations		Suited
447:						
Charger fine sandy loam	80	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Permeabilit
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Saturation
		Rare flooding	0.50	Rare flooding	0.40	depth
448:						
Haploxerolls clay loam--	75	Limitations		Limitations		Suited
		Saturation < 6' depth	1.00	Rare flooding	0.40	
		Rare flooding	0.50			

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
449:						
Haploxerolls loam-------	75	Limitations		Limitations		Suited
		Saturation < 6' depth	1.00	Rare flooding	0.40	
		Seepage in bottom layer	1.00			
		Rare flooding	0.50			
500:						
Lofgren clay----------	45	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Silty clay c
		Clay or silty clay	1.00	Depth to pan 40-60"	0.71	Packing (OL,
Blavo clay----------	40	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to par
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Silty clay c
501:						
Lofgren clay, occasionally flooded---	45	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (any
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Silty clay c
		Ponding (any duration)	1.00	Depth to pan 40-60"	0.84	Packing (OL,
Blavo clay, occasionally flooded---	40	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Depth to pan < 40"	1.00	Depth to par
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Silty clay c
502:						
Blavo silt loam, overwash, occasionally flooded----------	80	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Depth to pan < 40"	1.00	Depth to par
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Silty clay c

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
519:						
Edjobe silty clay-------	85	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Silt or cla
		Clay loam, silty clay, silty clay loam	0.50			10-60" Clay loam, silty clay
520:						
Esquon clay-------------	60	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Silty clay
		Clay or silty clay	1.00	Rare flooding	0.40	Packing (OL
Neerdobe clay-----------	30	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Silty clay
521:						
Neerdobe silt loam, overwash---------------	85	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Silty clay
		Clay or silty clay	1.00	Seepage in 20-40" depth	1.00	Packing (OL
522:						
Clear Lake silty clay loam, overwash---------	80	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation
		Ponding (any duration)	1.00	Frequent flooding	0.80	Silty clay
523:						
Esquon silty clay loam, overwash---------------	80	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Ponding (an
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation
		Ponding (any duration)	1.00	Frequent flooding	0.80	Silty clay
525:						
Govstanford loam--------	85	Limitations		Limitations		Suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation depth

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
526:						
Govstanford loam, occasionally flooded---	85	Limitations		Limitations		Suited
		Flooding >= occasional	1.00	Saturation < 5' depth	1.00	Saturation
		Saturation < 6' depth	1.00	Occasional flooding	0.60	depth
528:						
Neerdobe clay loam------	90	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation
550:						
Dunstone loam, dry------	60	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
Loafercreek silt loam, dry----------	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes 8 to
551:						
Dunstone loam, dry------	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
Lomarica loam----------	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15
Argonaut taxadjunct loam----------	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
552:						
Dunstone gravelly loam--	45	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
				Slopes 8 to 15%	0.01	Fragments (
		Slopes 8 to 15%	0.01			Slopes 8 to
Loafercreek gravelly loam--	40	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
				Seepage in 20-40" depth	1.00	Fragments (
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Permeabilit
553:						
Dunstone gravelly loam--	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
						Fragments (
Loafercreek gravelly loam--	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
				Seepage in 20-40" depth	1.00	Fragments (
554:						
Dunstone gravelly loam--	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
						Fragments (
Loafercreek gravelly loam--	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
				Seepage in 20-40" depth	1.00	Fragments (
555:						
Dunstone gravelly loam--	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
						Fragments (

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
555:						
Loafercreek gravelly loam----------	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
				Seepage in 20-40" depth	1.00	Fragments (
556:						
Mounthope loam----------	50	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
		Slopes 8 to 15%	0.01			Depth to be
Hartsmill gravelly loam	40	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Slopes 8 to 15%	0.01	Packing (OL
		Fragments (3-10") > 35%	1.00			Fragments (
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60"
557:						
Mounthope loam----------	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
Hartsmill gravelly loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00			Packing (OL
		Fragments (3-10") > 35%	1.00			Fragments (
558:						
Hartsmill gravelly loam	55	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00			Packing (OL
		Fragments (3-10") > 35%	1.00			Fragments (

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
558:						
Mounthope loam----------	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
559:						
Hartsmill gravelly loam	55	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00			Packing (OL
		Fragments (3-10") > 35%	1.00			Fragments (
Mounthope loam----------	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
560:						
Hartsmill gravelly loam	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00			Packing (OL
		Fragments (3-10") > 35%	1.00			Fragments (
Mounthope loam----------	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
561:						
Bigridge loam-----------	50	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.35	Fragments (
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Depth to be
						Slopes 8 to

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
561:						
Minniecreek loam--------	35	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bed
				Slopes 8 to 15%	0.01	Silt or clay
		Clay loam, silty clay, silty clay loam	0.50			10-60"
		Slopes 8 to 15%	0.01			Clay loam, s silty clay
562:						
Bigridge loam-----------	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (<
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.35	Slopes > 15%
						Depth to bed
Minniecreek loam--------	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
563:						
Bigridge loam-----------	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (<
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.35	Slopes > 15%
						Depth to bed
Minniecreek loam--------	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
564:						
Bigridge loam-----------	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (<
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.35	Slopes > 15%
						Depth to bed

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
564:						
Minniecreek loam--------	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60"
565:						
Dunstone loam, dry------	35	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
Argonaut taxadjunct loam--------------------	30	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay or silty clay	1.00	Slopes 8 to 15%	0.01	Silty clay
		Slopes 8 to 15%	0.01			Packing (OL
Sunnyslope loam---------	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay loam, silty clay, silty clay loam	0.50			Fragments (
						Silt or cla 10-60"
566:						
Dunstone loam, dry------	45	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
Loafercreek silt loam, dry--------------------	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes 8 to
Katskillhill loam-------	15	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.96	Silty clay
		Clay or silty clay	1.00	Slopes 8 to 15%	0.01	Packing (OL
		Slopes 8 to 15%	0.01			Clay or sil

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
567:						
Dunstone loam, dry------	40	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
Loafercreek silt loam, dry----------	25	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes 8 to
Argonaut taxadjunct loam----------	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
				Slopes 8 to 15%	0.01	Silty clay
		Clay or silty clay	1.00			Packing (OL
		Slopes 8 to 15%	0.01			
577:						
Parkshill coarse sandy loam----------	40	Limitations		Limitations		Suited
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes 8 to
Flanly loam------------	25	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes 8 to
Hurleton gravelly sandy loam----------	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Fragments (
		Slopes 8 to 15%	0.04	Slopes 8 to 15%	0.04	Depth to be
						Slopes 8 to
578:						
Flanly loam------------	45	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes 8 to

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
578:						
Swedesflat cobbly fine sandy loam----------	35	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes 8 to
		Fragments (3-10") 15-35%	0.01			
580:						
Surnuf taxadjunct loam--	40	Limitations		Limitations		Not suited
		Clay or silty clay	1.00	Slopes 8 to 15%	0.01	Silty clay
		Slopes 8 to 15%	0.01			Packing (OL
						Clay or sil
Griffgulch very gravelly silt loam-----	25	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.01	Silty clay
		Clay or silty clay	1.00	Slopes 8 to 15%	0.01	Packing (OL
		Fragments (3-10") 15-35%	0.97			Clay or sil
Rock outcrop, metavolcanic----------	20	Not rated		Not rated		Not rated
581:						
Surnuf taxadjunct loam--	65	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay
						Packing (OL
Griffgulch very gravelly silt loam-----	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.01	Silty clay
		Clay or silty clay	1.00			Packing (OL
582:						
Surnuf taxadjunct loam--	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay
						Packing (OL

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
582:						
Griffgulch very gravelly silt loam-----	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.01	Silty clay c Packing (OL/
		Clay or silty clay	1.00			
583:						
Surnuf taxadjunct loam--	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Clay or silty clay	1.00			Silty clay c Packing (OL/
Griffgulch very gravelly silt loam-----	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.01	Silty clay c Packing (OL/
		Clay or silty clay	1.00			
584:						
Flanly loam-------------	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
Swedesflat cobbly fine sandy loam-------------	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		Fragments (3-10") 15-35%	0.01			
Rackerby very gravelly sandy loam-------------	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15% Fragments (<

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
585:						
Flanly loam----------	45	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes 8 to
Sommeyflat loam---------	35	Limitations		No limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00			
		Seepage in bottom layer	1.00			
586:						
Sommeyflat loam---------	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00			
		Seepage in bottom layer	1.00			
Mounthope loam----------	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
587:						
Sommeyflat loam---------	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00			
		Seepage in bottom layer	1.00			
Mounthope loam----------	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
Hurleton gravelly sandy loam--------------------	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
						Slopes > 15

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
588:						
Ultic Haploxeralfs, thermic, high terrace--	95	Not rated		Limitations		Not rated
				Saturation < 5' depth	1.00	
589:						
Ultic Haploxeralfs, thermic, high terrace--	95	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Saturation < 5' depth	1.00	
590:						
Vistarobles sandy loam--	30	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation <
Redding loam----------	25	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
				Saturation < 5' depth	1.00	Saturation f depth
Argonaut taxadjunct loam----------	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bed
		Clay or silty clay	1.00			Silty clay c
						Packing (OL,
Haploxererts gravelly silty clay----------	15	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Saturation <
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.99	Silty clay c
603:						
Oroville gravelly fine sandy loam----------	30	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any
		Clay loam, silty clay, silty clay loam	0.50	Saturation < 5' depth	1.00	Saturation <

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
603:						
Thermalito sandy loam---	25	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
				Saturation < 5' depth	1.00	Saturation
						Fragments (
Fernandez sandy loam----	15	Limitations		Limitations		Suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Silt or cla
		Clay loam, silty clay, silty clay loam	0.50			10-60"
						Clay loam, silty clay
						Saturation depth
Thompsonflat fine sandy loam----------	15	Limitations		No limitations		Suited
		Saturation < 6' depth	1.00			Fragments (
		Fragments (3-10") 15-35%	0.06			
605:						
Duric Xerarents fine sandy loam, leveled----	75	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Depth to thin cemented pan	0.50	Saturation < 5' depth	1.00	Saturation
Oroville gravelly fine sandy loam----------	20	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Clay loam, silty clay, silty clay loam	0.50	Saturation < 5' depth	1.00	Saturation
606:						
Redtough loam----------	45	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Fragments (3-10") 15-35%	0.30	Saturation < 5' depth	1.00	Saturation
Fallager loam----------	30	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
606:						
Anita, gravelly duripan	15	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation
609:						
Anita, gravelly duripan	50	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (an
		Clay or silty clay	1.00	Saturation < 5' depth	1.00	Saturation
Tuscan taxadjunct gravelly clay loam-----	40	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pa
		Clay loam, silty clay, silty clay loam	0.50	Saturation < 5' depth	1.00	Saturation
						Packing (OL
614:						
Doemill gravelly loam---	50	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation
						Fragments (
Jokerst very cobbly loam	40	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Depth to be
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Bedrock depth < 40"	1.00	Saturation
615:						
Doemill gravelly loam---	50	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation
						Fragments (
Jokerst very cobbly loam	40	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Ponding (any duration)	1.00	Depth to be
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Ponding (an
		Ponding (any duration)	1.00	Bedrock depth < 40"	1.00	Saturation

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
616:						
Jokerst very cobbly loam	35	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes 8 to
Doemill gravelly loam---	35	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes 8 to
Typic Haploxeralfs gravelly loam----------	15	Not rated		Limitations		Not rated
				Slopes 8 to 15%	0.84	
617:						
Doemill gravelly loam---	35	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Slopes > 15%	1.00	Depth to be
		Slopes > 15%	1.00	Saturation < 5' depth	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation
Jokerst very cobbly loam	30	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Slopes > 15%	1.00	Depth to be
		Slopes > 15%	1.00	Saturation < 5' depth	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation
Typic Haploxeralfs gravelly loam----------	20	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
619:						
Carhart taxadjunct clay	90	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Depth to be
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Ponding (an
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
620:						
Doemill gravelly loam---	40	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation Fragments (
Jokerst very cobbly loam	25	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Depth to be
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Ponding (an
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation
Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Fragments (Saturation depth
		Fragments (3-10") > 35%	1.00			
621:						
Doemill gravelly loam---	30	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes 8 to
Jokerst very cobbly loam	30	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes 8 to
Ultic Haploxeralfs, thermic, gravelly loam	20	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Fragments (
		Fragments (3-10") > 35%	1.00	Slopes 8 to 15%	0.37	Silt or cla 10-60"
622:						
Xerorthents, shallow----	40	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Bedrock depth < 40"	1.00	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
622:						
Typic Haploxeralfs gravelly loam----------	30	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Bedrock depth < 40"	0.99	
Rock outcrop, mudflow-breccia cliffs---------	15	Not rated		Not rated		Not rated
623:						
Xerorthents, shallow----	40	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Bedrock depth < 40"	1.00	
Typic Haploxeralfs gravelly loam----------	25	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Bedrock depth < 40"	0.99	
Rock outcrop, mudflow-breccia cliffs---------	20	Not rated		Not rated		Not rated
624:						
Ultic Haploxeralfs, mesic, gravelly loam---	60	Not rated		Limitations		Not rated
				Bedrock depth from 40-60"	0.96	
Rockstripe very gravelly loam----------	25	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Fragments (3-10") 15-35%	0.40			Fragments (
625:						
Ultic Haploxeralfs, mesic, gravelly loam---	50	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Bedrock depth from 40-60"	0.96	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
625:						
Rockstripe very gravelly loam	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		Fragments (3-10") 15-35%	0.40			Fragments (>
626:						
Ultic Haploxeralfs gravelly loam	40	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Bedrock depth from 40-60"	0.61	
Rockstripe very gravelly loam	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		Fragments (3-10") 15-35%	0.40			Fragments (>
Rock outcrop, mudflow-breccia cliffs	15	Not rated		Not rated		Not rated
627:						
Ultic Haploxeralfs gravelly loam	40	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Bedrock depth from 40-60"	0.61	
Rockstripe very gravelly loam	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		Fragments (3-10") 15-35%	0.40			Fragments (>
Rock outcrop, mudflow-breccia cliffs	15	Not rated		Not rated		Not rated

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
628:						
Rockstripe very gravelly loam----------	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		Fragments (3-10") 15-35%	0.40			Fragments (>
Ultic Haploxeralfs gravelly loam----------	35	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Bedrock depth from 40-60"	0.61	
Rock outcrop, mudflow-breccia cliffs---------	20	Not rated		Not rated		Not rated
629:						
Slideland gravelly loam	80	Limitations		Limitations		Suited
		Clay loam, silty clay, silty clay loam	0.50	Slopes 8 to 15%	0.37	Silt or clay 10-60"
		Slopes 8 to 15%	0.37			Clay loam, s silty clay
						Slopes 8 to
630:						
Slideland gravelly loam	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
						Clay loam, s silty clay
631:						
Slideland gravelly loam	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
						Clay loam, s silty clay

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
632:						
Ultic Haploxeralfs, conglomerate, very deep	50	Not rated		Limitations		Not rated
				Slopes 8 to 15%	0.84	
Ultic Haploxeralfs, conglomerate, moderately deep	40	Not rated		Limitations		Not rated
				Bedrock depth < 40"	1.00	
633:						
Ultic Haploxeralfs, conglomerate, very deep	60	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
Ultic Haploxeralfs, conglomerate, moderately deep	30	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Bedrock depth < 40"	1.00	
634:						
Ultic Haploxeralfs, conglomerate, very deep	60	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
Ultic Haploxeralfs, conglomerate, moderately deep	30	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Bedrock depth < 40"	1.00	
635:						
Ultic Haploxeralfs, conglomerate, very deep	50	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
Ultic Haploxeralfs, conglomerate, moderately deep	40	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Bedrock depth < 40"	1.00	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
636:						
Ultic Haploxeralfs, conglomerate, moderately deep	50	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Bedrock depth < 40"	1.00	
Ultic Haploxeralfs, conglomerate, very deep	40	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
637:						
Ultic Haploxeralfs, sandstone	80	Not rated		Limitations		Not rated
				Slopes 8 to 15%	0.01	
638:						
Ultic Haploxeralfs, sandstone	80	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
639:						
Ultic Haploxeralfs, sandstone	75	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
640:						
Ultic Haploxeralfs, sandstone	75	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
641:						
Ultic Haploxeralfs, sandstone	75	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
642:						
Chinacamp gravelly loam	70	Limitations		No limitations		Suited
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
						Clay loam, s silty clay
						Fragments (

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
643:						
Chinacamp gravelly loam	70	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
						Clay loam, s silty clay
644:						
Chinacamp gravelly loam	70	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
						Clay loam, s silty clay
645:						
Chinacamp gravelly loam	70	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
						Clay loam, s silty clay
646:						
Coalcanyon taxadjunct very gravelly loam-----	80	Limitations		No limitations		Suited
		Fragments (3-10") > 35%	1.00			Silt or clay 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, s silty clay
						Fragments (>
647:						
Coalcanyon taxadjunct very gravelly loam-----	75	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Fragments (3-10") > 35%	1.00			Silt or clay 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, s silty clay

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
648:						
Coalcanyon taxadjunct very gravelly loam-----	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Fragments (3-10") > 35%	1.00			Silt or cla
		Clay loam, silty clay, silty clay loam	0.50			10-60"
						Clay loam,
						silty clay
649:						
Coalcanyon taxadjunct very gravelly loam-----	75	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Fragments (3-10") > 35%	1.00			Silt or cla
		Clay loam, silty clay, silty clay loam	0.50			10-60"
						Clay loam,
						silty clay
650:						
Schott very gravelly loam-------------------	65	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.42	Fragments (
		Fragments (3-10") > 35%	1.00			Silt or cla
		Clay loam, silty clay, silty clay loam	0.50			10-60"
						Clay loam,
						silty clay
651:						
Schott very gravelly loam-------------------	65	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.42	Fragments (
		Fragments (3-10") > 35%	1.00			Silt or cla
						10-60"
652:						
Schott very gravelly loam-------------------	65	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.42	Fragments (
		Fragments (3-10") > 35%	1.00			Silt or cla
						10-60"

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
652:						
Rock outcrop, mudflow breccia	20	Not rated		Not rated		Not rated
654:						
Coridge bouldery loam	70	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation depth
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60"
Rock outcrop, Cohasset basalt	20	Not rated		Not rated		Not rated
655:						
Coridge bouldery loam	70	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation depth
		Clay loam, silty clay, silty clay loam	0.50	Slopes 8 to 15%	0.16	Silt or cla 10-60"
Rock outcrop, Cohasset basalt	20	Not rated		Not rated		Not rated
656:						
Rock outcrop, basalt cliffs	40	Not rated		Not rated		Not rated
Coalcanyon taxadjunct very gravelly loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Fragments (3-10") > 35%	1.00			Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
657:						
Bonneyridge sandy loam	35	Limitations		Limitations		Not suited
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
		Sandy textures	0.50			Sandy textu

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
657:						
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Seepage in bottom layer	1.00			Permeabilit
						Fragments (
Rock outcrop, quartz diorite	20	Not rated		Not rated		Not rated
658:						
Bonneyridge sandy loam	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
		Sandy textures	0.50			Sandy textu
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Seepage in bottom layer	1.00			Permeabilit
Rock outcrop, quartz diorite	25	Not rated		Not rated		Not rated
659:						
Bonneyridge sandy loam	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
		Sandy textures	0.50			Sandy textu
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Seepage in bottom layer	1.00			Permeabilit
Rock outcrop, quartz diorite	25	Not rated		Not rated		Not rated

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
660:						
Bonneyridge sandy loam--	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
		Sandy textures	0.50			Sandy textu
Chawanakee gravelly sandy loam----------	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Seepage in bottom layer	1.00			Permeabilit
Rock outcrop, quartz diorite----------	30	Not rated		Not rated		Not rated
661:						
Millerridge gravelly sandy clay loam--------	45	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60"
						Clay loam, silty clay
Boxrobber cobbly sandy clay loam----------	40	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Fragments (3-10") 15-35%	0.72			Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
662:						
Millerridge gravelly sandy clay loam--------	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60"

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
662:						
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") 15-35%	0.72			Silt or cla 10-60"
663:						
Millerridge gravelly sandy clay loam	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60"
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") 15-35%	0.72			Silt or cla 10-60"
664:						
Millerridge gravelly sandy clay loam	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60"
Boxrobber cobbly sandy clay loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") 15-35%	0.72			Silt or cla 10-60"

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
665:						
Surnuf gravelly loam----	40	Limitations		Limitations		Not suited
		Clay or silty clay	1.00	Slopes 8 to 15%	0.01	Silty clay
		Slopes 8 to 15%	0.01			Packing (OI
						Clay or sil
Bigridge loam----------	40	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.35	Fragments (
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Depth to be
						Slopes 8 to
666:						
Surnuf gravelly loam----	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay
						Packing (OI
Bigridge loam----------	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.35	Slopes > 15
						Depth to be
667:						
Surnuf gravelly loam----	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay
						Packing (OI
Bigridge loam----------	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.35	Slopes > 15
						Depth to be
668:						
Surnuf gravelly loam----	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay
						Packing (OI

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
668:						
Bigridge loam----------	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.35	Slopes > 15
						Depth to be
669:						
Oroshore gravelly loam--	35	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
				Slopes 8 to 15%	0.01	Silt or cla
		Fragments (3-10") 15-35%	0.77			10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
Mounthope loam----------	25	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Silt or cla
				Slopes 8 to 15%	0.01	10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
		Slopes 8 to 15%	0.01			Depth to be
Dunstone gravelly loam--	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Fragments (
						Slopes 8 to
670:						
Oroshore gravelly loam--	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") 15-35%	0.77			Silt or cla 10-60"
Mounthope loam----------	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
Dunstone gravelly loam--	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
						Fragments (

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
671:						
Oroshore gravelly loam--	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		Fragments (3-10") 15-35%	0.77			Silt or clay 10-60"
Mounthope loam----------	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Silt or clay 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, s silty clay
Dunstone gravelly loam--	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
						Fragments (<
672:						
Oroshore gravelly loam--	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		Fragments (3-10") 15-35%	0.77			Silt or clay 10-60"
Mounthope loam----------	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Silt or clay 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, s silty clay
Dunstone gravelly loam--	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
						Fragments (<

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
674:						
Chawanakee gravelly sandy loam	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		Seepage in bottom layer	1.00			Permeability
Bonneyridge sandy loam	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
		Sandy textures	0.50			Sandy textur
Rock outcrop, quartz diorite	30	Not rated		Not rated		Not rated
675:						
Clearhayes sandy clay loam	70	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Saturation < 5' depth	1.00	Permeability
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	Saturation <
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.77	Depth to bed
Hamslough clay	15	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Depth to pan < 40"	1.00	Depth to pan
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (any
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Saturation <
676:						
Carhart clay	50	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Depth to bed
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Ponding (any
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation <
Anita taxadjunct clay	40	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Depth to bed
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Ponding (any
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation <

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
677:						
Tuscan gravelly loam----	40	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Lithic or paralithic bedrock < 72"	1.00	Saturation < 5' depth	1.00	Depth to bed
		Clay or silty clay	1.00	Bedrock depth < 40"	1.00	Saturation <
Fallager loam----------	25	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Saturation < 5' depth	1.00	Ponding (any
Anita, gravelly duripan	15	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Depth to pan < 40"	1.00	Depth to pan
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Saturation < 5' depth	1.00	Ponding (any
679:						
Lucksev loam----------	40	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation <
		Clay or silty clay	1.00			Silty clay c
Butteside gravelly loam	35	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bed
		Clay or silty clay	1.00			Silty clay c
						Packing (OL,
Carhart clay----------	15	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Saturation <
		Clay or silty clay	1.00			Silty clay c
680:						
Lucksev loam----------	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		Clay or silty clay	1.00			Silty clay c

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
680:						
Butteside gravelly loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay
683:						
Typic Haploxeralfs, magnesic, low elevation	50	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Fragments (3-10") 15-35%	0.66	Slopes 8 to 15%	0.01	Silt or cla
		Clay loam, silty clay, silty clay loam	0.50			10-60"
						Clay loam,
						silty clay
Earlal very gravelly loam----------	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Fragments (3-10") > 35%	1.00	Slopes 8 to 15%	0.16	Silt or cla
		Clay loam, silty clay, silty clay loam	0.50			10-60"
						Clay loam,
						silty clay
Rock outcrop, serpentinite----------	15	Not rated		Not rated		Not rated
684:						
Typic Haploxeralfs, magnesic, low elevation	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") 15-35%	0.66			Silt or cla
						10-60"
Earlal very gravelly loam----------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") > 35%	1.00			Silt or cla
						10-60"
Rock outcrop, serpentinite----------	15	Not rated		Not rated		Not rated

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
685:						
Bosquejo taxadjunct gravelly substratum----	70	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Ponding (any duration)	1.00	Ponding (an
		Ponding (any duration)	1.00	Saturation < 5' depth	1.00	Silt or cla
		Rare flooding	0.50	Rare flooding	0.40	10-60"
						Clay loam,
						silty clay
686:						
Redsluff taxadjunct clay loam----------	70	Limitations		Limitations		Suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Silt or cla
		Lithic or paralithic bedrock < 72"	1.00	Rare flooding	0.40	10-60"
						Saturation
		Rare flooding	0.50			depth
687:						
Xerorthents, shallow----	45	Not rated		Limitations		Not rated
				Bedrock depth < 40"	1.00	
Typic Haploxeralfs gravelly loam----------	40	Not rated		Limitations		Not rated
				Bedrock depth < 40"	0.99	
				Slopes 8 to 15%	0.63	
700:						
Retsongulch very gravelly sandy loam----	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
				Seepage in 20-40" depth	1.00	Fragments (
		Seepage in bottom layer	1.00			
Flumewall gravelly sandy loam----------	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
						Fragments (
		Fragments (3-10") 15-35%	0.38			

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
701:						
Powellton gravelly loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
Obstruction gravelly sandy loam	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
702:						
Cerpone gravelly loam	50	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Slopes 8 to 15%	0.37	Fragments (<
		Clay loam, silty clay, silty clay loam	0.50	Bedrock depth from 40-60"	0.03	Silt or clay 10-60"
		Slopes 8 to 15%	0.37			Clay loam, s silty clay
Typic Haploxeralfs, magnesic, very gravelly loam	20	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Slopes 8 to 15%	0.16	Silt or clay 10-60"
		Fragments (3-10") 15-35%	0.82	Bedrock depth from 40-60"	0.14	Clay loam, s silty clay
		Clay loam, silty clay, silty clay loam	0.50			Fragments (<
Earlal very gravelly loam	15	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bed
		Fragments (3-10") > 35%	1.00	Slopes 8 to 15%	0.16	Silt or clay 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, s silty clay
703:						
Cerpone gravelly loam	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.03	Fragments (<
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
703:						
Typic Haploxeralfs, magnesic, very gravelly loam	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.14	Silt or cla 10-60"
		Fragments (3-10") 15-35%	0.82			Clay loam, silty clay
Earlal very gravelly loam	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") > 35%	1.00			Silt or cla 10-60"
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated
704:						
Typic Haploxeralfs, magnesic, very gravelly loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.14	Silt or cla 10-60"
		Fragments (3-10") 15-35%	0.82			Clay loam, silty clay
Earlal very gravelly loam	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") > 35%	1.00			Silt or cla 10-60"
Cerpone gravelly loam	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.03	Fragments (
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60"

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
704:						
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated
705:						
Typic Haploxeralfs, magnesic, very gravelly loam	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.14	Silt or cla 10-60"
		Fragments (3-10") 15-35%	0.82			Clay loam, silty clay
Earlal very gravelly loam	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") > 35%	1.00			Silt or cla 10-60"
Cerpone gravelly loam	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.03	Fragments (
		Clay loam, silty clay, silty clay loam	0.50			Silt or cla 10-60"
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated
711:						
Dixmine very gravelly loam	45	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.16	Silt or cla 10-60"
		Fragments (3-10") 15-35%	0.96	Slopes 8 to 15%	0.01	Clay loam, silty clay
		Clay loam, silty clay, silty clay loam	0.50			Fragments (

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
711:						
Toadtown loam----------	40	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Slopes 8 to 15%	0.01	Silt or clay 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, s silty clay
		Slopes 8 to 15%	0.01			Slopes 8 to
712:						
Dixmine very gravelly loam----------	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.16	Silt or clay 10-60"
		Fragments (3-10") 15-35%	0.96			Clay loam, s silty clay
Toadtown loam----------	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00			Silt or clay 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, s silty clay
713:						
Dixmine very gravelly loam----------	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.16	Silt or clay 10-60"
		Fragments (3-10") 15-35%	0.96			Clay loam, s silty clay
Toadtown loam----------	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00			Silt or clay 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, s silty clay

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
714:						
Dixmine very gravelly loam	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.16	Silt or cla 10-60"
		Fragments (3-10") 15-35%	0.96			Clay loam, silty clay
Toadtown loam	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00			Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
715:						
Logtrain gravelly loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.14	Fragments (
		Fragments (3-10") 15-35%	0.54			Depth to be
Bottlehill very gravelly loam	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15
Walkermine very gravelly loam	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") 15-35%	0.61			Fragments (

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
716:						
Griffgulch very gravelly silt loam-----	40	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.01	Silty clay Packing (OL
		Clay or silty clay	1.00			Clay or sil
		Fragments (3-10") 15-35%	0.97			
Surnuf gravelly loam----	40	Limitations		Limitations		Not suited
		Clay or silty clay	1.00	Slopes 8 to 15%	0.01	Silty clay Packing (OL
		Slopes 8 to 15%	0.01			Clay or sil
717:						
Griffgulch very gravelly silt loam-----	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.01	Silty clay Packing (OL
		Clay or silty clay	1.00			
Surnuf gravelly loam----	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay Packing (OL
718:						
Griffgulch very gravelly silt loam-----	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.01	Silty clay Packing (OL
		Clay or silty clay	1.00			
Surnuf gravelly loam----	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay Packing (OL

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
718:						
Spine taxadjunct very cobbly loam----------	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") > 35%	1.00			Fragments (
719:						
Griffgulch very gravelly silt loam-----	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.01	Silty clay
		Clay or silty clay	1.00			Packing (OL
Surnuf gravelly loam----	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay
						Packing (OL
Spine taxadjunct very cobbly loam----------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") > 35%	1.00			Fragments (
720:						
Dystroxerepts extremely gravelly loam----------	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") > 35%	1.00			Fragments (
Haploxeralfs very gravelly loam----------	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.71	Fragments (
		Fragments (3-10") > 35%	1.00			Depth to be

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
720:						
Rock outcrop, metavolcanic	15	Not rated		Not rated		Not rated
721:						
Haploxerands, granitic till, medial sandy loam	70	Not rated		Limitations		Not rated
				Seepage in 20-40" depth	1.00	
				Slopes 8 to 15%	0.96	
722:						
Haploxerands, granitic till, medial sandy loam	70	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Seepage in 20-40" depth	1.00	
723:						
Haploxerands, granitic till, medial sandy loam	70	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Seepage in 20-40" depth	1.00	
724:						
Haploxerands, volcanic till, cobbly medial sandy loam	75	Not rated		Limitations		Not rated
				Seepage in 20-40" depth	1.00	
				Slopes 8 to 15%	0.16	
725:						
Haploxerands, volcanic till, cobbly medial sandy loam	75	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Seepage in 20-40" depth	1.00	
726:						
Haploxerands, volcanic till, cobbly medial sandy loam	75	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Seepage in 20-40" depth	1.00	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
727:						
Bonneyridge sandy loam--	85	Limitations		Limitations		Not suited
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
		Sandy textures	0.50			Sandy textur
728:						
Bonneyridge sandy loam--	85	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
		Sandy textures	0.50			Sandy textur
729:						
Bonneyridge sandy loam--	85	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
		Sandy textures	0.50			Sandy textur
730:						
Tusccoll gravelly loam--	60	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
						Clay loam, s silty clay
Schott very gravelly loam----------	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.42	Fragments (>
		Fragments (3-10") > 35%	1.00			Silt or clay 10-60"
731:						
Tusccoll gravelly loam--	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay 10-60"
						Clay loam, s silty clay

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
731:						
Schott very gravelly loam	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.42	Fragments (
		Fragments (3-10") > 35%	1.00			Silt or cla 10-60"
732:						
Bonepile taxadjunct, duripan substratum	90	Limitations		Limitations		Suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Depth to pa
		Fragments (3-10") 15-35%	0.82	Depth to pan 40-60"	0.71	Fragments (
						Fragments (
733:						
Haploxeralfs, terrace, gravelly loam	75	Not rated		No limitations		Not rated
734:						
Haploxerands medial sandy loam	55	Not rated		Limitations		Not rated
				Slopes > 15%	1.00	
				Seepage in 20-40" depth	1.00	
Aquic Xerofluvents peaty very fine sandy loam	35	Limitations		Limitations		Not suited
		Flooding >= occasional	1.00	Saturation < 5' depth	1.00	Saturation
		Saturation < 6' depth	1.00	Seepage in 20-40" depth	1.00	Packing (OL
		Organic matter (PT, OL, or OH)	1.00	Frequent flooding	0.80	
735:						
Fluvaquents, loamy	80	Not rated		Limitations		Not rated
				Saturation < 5' depth	1.00	
				Seepage in 20-40" depth	1.00	
				Rare flooding	0.40	
801:						
Obstruction gravelly sandy loam	70	Limitations		Limitations		Suited
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
		Slopes 8 to 15%	0.16	Slopes 8 to 15%	0.16	Slopes 8 to

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
802:						
Obskel very gravelly sandy loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.06	Fragments (
						Depth to be
Obstruction gravelly sandy loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
803:						
Obskel very gravelly sandy loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.06	Fragments (
						Depth to be
Obstruction gravelly sandy loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
804:						
Obskel very gravelly sandy loam	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.06	Fragments (
						Depth to be
Obstruction gravelly sandy loam	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
Retsongulch very gravelly sandy loam	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
805:						
Bottlehill very gravelly loam----------	50	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Fragments (
		Clay loam, silty clay, silty clay loam	0.50			Depth to be Silt or cla 10-60"
Walkermine very gravelly loam----------	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Slopes 8 to 15%	0.84	Slopes 8 to 15%	0.84	Slopes 8 to
		Fragments (3-10") 15-35%	0.61			Fragments (
Logtrain gravelly loam--	20	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.14	Fragments (
		Fragments (3-10") 15-35%	0.54			Depth to be
806:						
Bottlehill very gravelly loam----------	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15
Walkermine very gravelly loam----------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") 15-35%	0.61			Fragments (
Logtrain gravelly loam--	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.14	Fragments (
		Fragments (3-10") 15-35%	0.54			Depth to be

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
807:						
Bottlehill very gravelly loam----------	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15
Logtrain gravelly loam--	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.14	Fragments (
		Fragments (3-10") 15-35%	0.54			Depth to be
Walkermine very gravelly loam----------	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") 15-35%	0.61			Fragments (
808:						
Bottlehill very gravelly loam----------	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15
Walkermine very gravelly loam----------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") 15-35%	0.61			Fragments (
Logtrain gravelly loam--	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.14	Fragments (
		Fragments (3-10") 15-35%	0.54			Depth to be

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
809:						
Walkermine very gravelly loam----------	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Fragments (3-10") 15-35%	0.61			Fragments (
Bottlehill very gravelly loam----------	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15
Logtrain gravelly loam--	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.14	Fragments (
		Fragments (3-10") 15-35%	0.54			Depth to be
Rock outcrop, metavolcanic----------	15	Not rated		Not rated		Not rated
810:						
Dixmine very gravelly loam----------	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.16	Silt or cla 10-60"
		Fragments (3-10") 15-35%	0.96			Clay loam, silty clay
Mac gravelly loam-------	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
						Fragments (

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
810:						
Spine very gravelly loam	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15
811:						
Powellton gravelly loam	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
Toadtown loam	40	Limitations		No limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00			Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
812:						
Powellton gravelly loam	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
Toadtown loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00			Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
813:						
Powellton gravelly loam	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
Toadtown loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00			Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
814:						
Mountyana gravelly loam	80	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Slopes 8 to 15%	0.16	Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
		Slopes 8 to 15%	0.16			Slopes 8 to
815:						
Mountyana gravelly loam	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00			Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
817:						
Lydon very gravelly medial coarse sandy loam----------	80	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (
		Fragments (3-10") 15-35%	0.73			Permeabilit
818:						
Lydon very gravelly medial coarse sandy loam----------	75	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (
819:						
Lydon very gravelly medial coarse sandy loam----------	65	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Fragments (
Rock outcrop, mudflow breccia----------	20	Not rated		Not rated		Not rated

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
820:						
Lydon very gravelly medial coarse sandy loam	60	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
				Seepage in 20-40" depth	1.00	Fragments (
		Seepage in bottom layer	1.00			
Rock outcrop, mudflow breccia	25	Not rated		Not rated		Not rated
821:						
Lydon very gravelly medial coarse sandy loam	55	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
				Seepage in 20-40" depth	1.00	Fragments (
		Seepage in bottom layer	1.00			
Rock outcrop, mudflow breccia	30	Not rated		Not rated		Not rated
822:						
Bonepile gravelly medial loam	85	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.88	Depth to be
						Fragments (
823:						
Bonepile gravelly medial loam	85	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.88	Depth to be
						Fragments (
824:						
Beecee very gravelly medial loam	85	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
						Slopes > 15

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
825:						
Beecee very gravelly medial loam----------	60	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
						Slopes > 15
Lydon very gravelly medial coarse sandy loam----------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
				Seepage in 20-40" depth	1.00	Fragments (
		Seepage in bottom layer	1.00			
826:						
Redbone gravelly medial sandy loam----------	80	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Fragments (
				Slopes 8 to 15%	0.16	Slopes 8 to
		Seepage in bottom layer	1.00	Bedrock depth from 40-60"	0.12	Permeabilit
		Slopes 8 to 15%	0.16			
827:						
Redbone gravelly medial sandy loam----------	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Slopes > 15
				Bedrock depth from 40-60"	0.12	Permeabilit
		Seepage in bottom layer	1.00			
829:						
Paradiso loam----------	80	Limitations		No limitations		Not suited
		Clay or silty clay	1.00			Silty clay
						Packing (OL
						Clay or sil
830:						
Paradiso loam----------	75	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay
						Packing (OL

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
831:						
Surnuf gravelly loam----	40	Limitations		Limitations		Not suited
		Clay or silty clay	1.00	Slopes 8 to 15%	0.01	Silty clay
		Slopes 8 to 15%	0.01			Packing (OI
						Clay or sil
Bigridge loam----------	30	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.35	Fragments (
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Depth to be
						Slopes 8 to
Spine very gravelly loam--------------------	15	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Fragments (
		Clay loam, silty clay, silty clay loam	0.50	Slopes 8 to 15%	0.04	Depth to be
		Slopes 8 to 15%	0.04			Silt or cla 10-60"
832:						
Surnuf gravelly loam----	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay
						Packing (OI
Bigridge loam----------	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.35	Slopes > 15
						Depth to be
Spine very gravelly loam--------------------	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15
833:						
Surnuf gravelly loam----	60	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay
						Packing (OI

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
833:						
Bigridge loam----------	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.35	Slopes > 15
						Depth to be
Spine very gravelly loam-------------------	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15
834:						
Hietanen gravelly loam--	50	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.42	Depth to be
Mac gravelly loam-------	30	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
						Fragments (
835:						
Hietanen gravelly loam--	60	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.42	Depth to be
Mac gravelly loam-------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
						Fragments (
836:						
Hietanen gravelly loam--	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.42	Depth to be

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
836:						
Mac gravelly loam-------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
						Fragments (
Spine very gravelly loam--------------------	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15
837:						
Hietanen gravelly loam--	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.42	Depth to be
Spine very gravelly loam--------------------	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15
Mac gravelly loam-------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
						Fragments (
838:						
Dixmine very gravelly loam--------------------	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.16	Silt or cla 10-60"
		Fragments (3-10") 15-35%	0.96			Clay loam, silty clay

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
838:						
Spine very gravelly loam	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Clay loam, silty clay, silty clay loam	0.50			Slopes > 15
Mac gravelly loam	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
						Fragments (
839:						
Chawanakee gravelly sandy loam	55	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Seepage in bottom layer	1.00	Slopes 8 to 15%	0.16	Permeabilit
		Slopes 8 to 15%	0.16			Fragments (
Billscabin gravelly sandy loam	35	Limitations		Limitations		Not suited
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
		Sandy textures	0.50	Slopes 8 to 15%	0.16	Fragments (
		Slopes 8 to 15%	0.16			Sandy textu
841:						
Billscabin gravelly sandy loam	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
		Sandy textures	0.50			Fragments (
Bonneyridge sandy loam	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeabilit
		Sandy textures	0.50			Sandy textu

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
842:						
Billscabin gravelly sandy loam----------	60	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
		Sandy textures	0.50			Fragments (<
Bonneyridge sandy loam--	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
		Sandy textures	0.50			Sandy textur
846:						
Bonneyridge sandy loam--	60	Limitations		Limitations		Not suited
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
		Sandy textures	0.50	Slopes 8 to 15%	0.01	Sandy textur
		Slopes 8 to 15%	0.01			Slopes 8 to
Lewisflat loam----------	20	Limitations		Limitations		Suited
		Seepage in bottom layer	1.00	Slopes 8 to 15%	0.01	Permeability
		Slopes 8 to 15%	0.01			Slopes 8 to
847:						
Bonneyridge sandy loam--	60	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
		Sandy textures	0.50			Sandy textur
Lewisflat loam----------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00			Permeability
848:						
Bonneyridge sandy loam--	60	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability
		Sandy textures	0.50			Sandy textur
Lewisflat loam----------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00			Permeability

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
850:						
Lewisflat loam----------	85	Limitations		No limitations		Suited
		Seepage in bottom layer	1.00			Permeability
851:						
Lewisflat loam----------	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00			Permeability
852:						
Lewisflat loam----------	75	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00			Permeability
860:						
Toadtown gravelly loam--	60	Limitations		Limitations		Not suited
		Clay or silty clay	1.00	Slopes 8 to 15%	0.01	Silty clay c
		Slopes 8 to 15%	0.01			Packing (OL,
						Clay or silt
Powellton silt loam-----	20	Limitations		Limitations		Suited
		Seepage in bottom layer	1.00	Slopes 8 to 15%	0.01	Slopes 8 to
		Slopes 8 to 15%	0.01			
861:						
Toadtown gravelly loam--	60	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Clay or silty clay	1.00			Silty clay c
						Packing (OL,
Powellton silt loam-----	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00			
862:						
Toadtown gravelly loam--	60	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Clay or silty clay	1.00			Silty clay c
						Packing (OL,
Powellton silt loam-----	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00			

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
863:						
Toadtown gravelly loam--	60	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay
						Packing (OL
Powellton silt loam-----	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Seepage in bottom layer	1.00			
880:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Not suited
		Clay or silty clay	1.00	Slopes 8 to 15%	0.01	Silty clay
		Slopes 8 to 15%	0.01			Packing (OL
						Clay or sil
Jocal taxadjunct gravelly loam----------	35	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Fragments (
				Slopes 8 to 15%	0.01	Depth to be
		Slopes 8 to 15%	0.01			
881:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay
						Packing (OL
Jocal taxadjunct gravelly loam----------	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Slopes > 15
						Depth to be
882:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Clay or silty clay	1.00			Silty clay
						Packing (OL

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
882:						
Jocal taxadjunct gravelly loam----------	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (<
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Slopes > 15%
						Depth to bed
883:						
Sites taxadjunct gravelly loam----------	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Clay or silty clay	1.00			Silty clay c
						Packing (OL,
Jocal taxadjunct gravelly loam----------	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (<
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.26	Slopes > 15%
						Depth to bed
885:						
Rogerville silt loam----	75	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.32	Silty clay c
				Slopes 8 to 15%	0.01	Packing (OL,
		Clay or silty clay	1.00			Clay or silt
		Slopes 8 to 15%	0.01			
886:						
Rogerville silt loam----	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.32	Silty clay c
						Packing (OL,
		Clay or silty clay	1.00			
892:						
Rogerville silt loam----	85	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.32	Silty clay c
						Packing (OL,
		Clay or silty clay	1.00			

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
893:						
Rogerville silt loam----	85	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.32	Silty clay c
		Clay or silty clay	1.00			Packing (OL,
902:						
Lava flows, Lovejoy basalt----------	50	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam----------	40	Limitations		Limitations		Not rated
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	
		Seepage in bottom layer	1.00			
		Fragments (3-10") > 35%	1.00			
903:						
Mudwash gravelly medial sandy loam----------	45	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Fragments (<
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes 8 to
Timberisland very gravelly medial sandy loam----------	25	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Slopes > 15%	1.00	Organic matt
		Fragments (3-10") > 35%	1.00	Seepage in 20-40" depth	1.00	Slopes > 15%
		Slopes > 15%	1.00	Bedrock depth from 40-60"	0.61	Fragments (>
Lavatop gravelly medial fine sandy loam--------	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bed
		Fragments (3-10") 15-35%	0.59	Slopes 8 to 15%	0.01	Organic matt
		Slopes 8 to 15%	0.01			Fragments (<
904:						
Lava flows, Lovejoy basalt----------	60	Not rated		Not rated		Not rated

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
904:						
Lavatop gravelly medial fine sandy loam--------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		Fragments (3-10") 15-35%	0.59			Organic matt
905:						
Lava flows, Lovejoy basalt-----------------	60	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam----------	30	Limitations		Limitations		Not rated
		Slopes > 15%	1.00	Slopes > 15%	1.00	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	
		Seepage in bottom layer	1.00			
906:						
Lava flows, Lovejoy basalt-----------------	60	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam----------	30	Limitations		Limitations		Not rated
		Slopes > 15%	1.00	Slopes > 15%	1.00	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	
		Seepage in bottom layer	1.00			
911:						
Endoaquolls loam--------	75	Not rated		Limitations		Not rated
				Saturation < 5' depth	1.00	
				Occasional flooding	0.60	
923:						
Powderhouse medial sandy loam----------	45	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bed
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Organic matt
		Fragments (3-10") 15-35%	0.40	Slopes 8 to 15%	0.01	Permeability

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
923:						
McNair medial coarse sandy loam	25	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Fragments (
				Bedrock depth from 40-60"	0.02	Permeabilit
		Seepage in bottom layer	1.00	Slopes 8 to 15%	0.01	Depth to be
		Slopes 8 to 15%	0.01			
Greenwell medial sandy loam	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
				Slopes 8 to 15%	0.01	Organic mat
		Slopes 8 to 15%	0.01			Slopes 8 to
924:						
Powderhouse medial sandy loam	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
				Seepage in 20-40" depth	1.00	Organic mat
		Seepage in bottom layer	1.00			
McNair medial coarse sandy loam	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Fragments (
				Bedrock depth from 40-60"	0.02	Permeabilit
		Seepage in bottom layer	1.00			
Greenwell medial sandy loam	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
						Organic mat
925:						
Powderhouse medial sandy loam	45	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to be
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15
				Seepage in 20-40" depth	1.00	Organic mat
		Seepage in bottom layer	1.00			

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
925:						
McNair medial coarse sandy loam	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Fragments (<
				Bedrock depth from 40-60"	0.02	Permeability
		Seepage in bottom layer	1.00			
Greenwell medial sandy loam	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
						Organic matt
930:						
Shakeridge gravelly medial coarse sandy loam	50	Limitations		Limitations		Not suited
		Slopes 8 to 15%	0.01	Seepage in 20-40" depth	1.00	Fragments (<
				Slopes 8 to 15%	0.01	Organic matt
						Slopes 8 to
Timberisland very gravelly medial sandy loam	40	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Organic matt
				Bedrock depth from 40-60"	0.61	Fragments (>
		Fragments (3-10") > 35%	1.00	Slopes 8 to 15%	0.01	Depth to bed
		Seepage in bottom layer	1.00			
931:						
Shakeridge gravelly medial coarse sandy loam	40	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (<
				Seepage in 20-40" depth	1.00	Slopes > 15%
						Organic matt
Mudwash gravelly medial sandy loam	25	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Fragments (<

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
931:						
Timberisland very gravelly medial sandy loam	15	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Organic mat
				Bedrock depth from 40-60"	0.61	Fragments (
		Fragments (3-10") > 35%	1.00			
932:						
Shakeridge gravelly medial coarse sandy loam	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
				Seepage in 20-40" depth	1.00	Slopes > 15
						Organic mat
Mudwash gravelly medial sandy loam	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Fragments (
933:						
Shakeridge gravelly medial coarse sandy loam	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Fragments (
				Seepage in 20-40" depth	1.00	Slopes > 15
						Organic mat
934:						
Mudwash gravelly medial sandy loam	80	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Fragments (
				Slopes 8 to 15%	0.01	Slopes 8 to
		Slopes 8 to 15%	0.01			
939:						
Fluvaquentic Humaquepts very fine sandy loam	85	Limitations		Limitations		Not suited
		Saturation < 6' depth	1.00	Saturation < 5' depth	1.00	Saturation
		Rare flooding	0.50	Rare flooding	0.40	

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
940:						
Dejonah gravelly loam---	50	Limitations		Limitations		Suited
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Permeability
		Slopes 8 to 15%	0.01	Slopes 8 to 15%	0.01	Slopes 8 to
Stagpoint loam----------	30	Limitations		Limitations		Not suited
		Seepage in bottom layer	1.00	Slopes 8 to 15%	0.01	Fragments (>
		Fragments (3-10") 15-35%	0.94			Permeability
		Slopes 8 to 15%	0.01			Slopes 8 to
941:						
Dejonah gravelly loam---	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Permeability
Stagpoint loam----------	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00			Fragments (>
		Fragments (3-10") 15-35%	0.94			Permeability
942:						
Stagpoint loam----------	50	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00			Fragments (>
		Fragments (3-10") 15-35%	0.94			Permeability
Dejonah gravelly loam---	30	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Permeability
948:						
Stagpoint loam----------	55	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Seepage in bottom layer	1.00			Fragments (>
		Fragments (3-10") 15-35%	0.94			Permeability
Dejonah gravelly loam---	35	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Permeability

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
949:						
Rogerville taxadjunct fine sandy loam--------	80	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.02	Silt or cla 10-60"
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay
950:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam--------	40	Limitations		Limitations		Not rated
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	
		Seepage in bottom layer	1.00	Slopes 8 to 15%	0.01	
		Slopes 8 to 15%	0.01			
Rock outcrop, olivine basalt, andesite, or mudflow----------	25	Not rated		Not rated		Not rated
Powderhouse medial sandy loam----------	20	Limitations		Limitations		Not suited
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to be
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Organic mat
		Fragments (3-10") 15-35%	0.40	Slopes 8 to 15%	0.01	Permeabilit
951:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam--------	40	Limitations		Limitations		Not rated
		Slopes > 15%	1.00	Slopes > 15%	1.00	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	
		Seepage in bottom layer	1.00			
Rock outcrop, andesite--	25	Not rated		Not rated		Not rated

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily la
		Limitations	Value	Limitations	Value	Limit
951:						
Powderhouse medial						
sandy loam----------	20	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bed
		Lithic or paralithic	1.00	Bedrock depth < 40"	1.00	Slopes > 15%
		bedrock < 72"		Seepage in 20-40" depth	1.00	Organic matt
		Seepage in bottom layer	1.00			
960:						
Surnuf gravelly loam,						
high elevation---------	85	Limitations		No limitations		Not suited
		Clay or silty clay	1.00			Silty clay c
						Packing (OL,
						Clay or silt
961:						
Surnuf gravelly loam,						
high elevation---------	85	Limitations		Limitations		Not suited
		Clay or silty clay	1.00	Slopes 8 to 15%	0.37	Silty clay c
		Slopes 8 to 15%	0.37			Packing (OL,
						Clay or silt
962:						
Surnuf gravelly loam,						
high elevation---------	85	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Clay or silty clay	1.00			Silty clay c
						Packing (OL,
963:						
Surnuf gravelly loam,						
high elevation---------	85	Limitations		Limitations		Not suited
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%
		Clay or silty clay	1.00			Silty clay c
						Packing (OL,
990:						
Riverwash, frequently						
flooded----------	100	Not rated		Not rated		Not rated

Table 17b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Dail l
		Limitations	Value	Limitations	Value	Limi
991:						
Xerofluvents sandy loam, frequently flooded	75	Not rated		Limitations		Not rated
				Saturation < 5' depth	1.00	
				Seepage in 20-40" depth	1.00	
				Frequent flooding	0.80	
995:						
Pits, gravel	100	Not rated		Not rated		Not rated
996:						
Dumps, excavated material	100	Not rated		Not rated		Not rated
997:						
Pits	95	Not rated		Not rated		Not rated
998:						
Dumps, landfill	100	Not rated		Not rated		Not rated
999:						
Water	100	Not rated		Not rated		Not rated
DAM:						
Dam, manmade	100	Not rated		Not rated		Not rated

The interpretation for trench sanitary landfill evaluates the following soil properties at variable depths in t ponding, wetness, slope, depth to hard or soft bedrock, depth to a thick or thin cemented pan, fragments 3 to 10 inc content (SAR), pH, clayey or sandy textures, and permeability that is too rapid, allowing seepage in some climates.

The interpretation for area sanitary landfill evaluates the following soil properties at variable depths in the ponding, wetness, slope, depth to bedrock, depth to a cemented pan, and permeability that is too rapid, allowing see

The interpretation for daily cover for landfill evaluates the following soil properties at variable depths in t wetness; slope; depth to bedrock; depth to a cemented pan; fragments more than, equal to, or less than 3 inches in s peat (PT); Unified classes for packing (OL, OH, CH, and MH); sandy or clayey textures; pH; carbonates; sodium conten (EC); soil climate; kaolinitic mineralogy; and permeability that is too rapid, allowing seepage.

Table 18a.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investig
the value columns range from 0.00 to 0.99. The closer the value is to 0.00, the greater the limitation. A value of
absolute limitation based on the soil property criteria used to develop the interpretation. Values closer to 1.00
limitations. Limiting features with values of 1.00 have absolutely no limitation and are not shown in the table. Ra
determined by the most limiting value. Fine-earth fractions and rock fragments are reported on a weight basis. An
criteria and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potentia of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
100:						
Anita clay----------	60	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to pan
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Saturation <
Galt clay----------	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
						Depth to pan
104:						
Bosquejo clay----------	85	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
105:						
Busacca clay loam-------	85	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay 27 to 4
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
108:						
Tuscan gravelly loam----	45	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Depth to pan
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Saturation <
						Clay > 40%
						Rock fragmen

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
108:						
Igo gravelly loam-------	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan Saturation < Rock fragmen Clay 27 to 4
Anita clay--------------	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to pan Clay > 40% Saturation <
109:						
Bosquejo clay loam------	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40%
110:						
Bosquejo silt loam, overwash, occasionally flooded----------	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40%
111yu:						
Auburn loam-------------	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to bed Slope 12 to Rock fragmen
Sobrante loam-----------	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Slope 12 to Depth to bed Rock fragmen
114yu:						
Auburn gravelly loam----	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Depth to bed Rock fragmen Slope 12 to

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
114yu:						
Sobrante gravelly loam--	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope 12 to Depth to bed
118:						
Xerorthents, tailings---	80	Poor source		Fair source		Fair source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.07	Sand fractio Rock fragmen
		Bottom layer not a source	0.00	Thickest layer a possible source	0.14	
118co:						
Clear Lake clay, frequently flooded-----	90	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	SAR 4 to 13
119:						
Xerorthents, tailings---	70	Poor source		Fair source		Fair source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.07	Sand fractio Rock fragmen
		Bottom layer not a source	0.00	Thickest layer a possible source	0.14	
Urban land----------	30	Not rated		Not rated		Not rated
119yu:						
Auburn gravelly loam----	30	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen
Sobrante gravelly loam--	30	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Depth to bed
Rock outcrop----------	20	Not rated		Not rated		Not rated

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
120:						
Gridley taxadjunct clay loam	80	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.04	Saturation f
						Clay 27 to 4
121:						
Boga loam	45	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
Loemstone loam	40	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
121su:						
Columbia fine sandy loam, frequently flooded	80	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Thickest layer a possible source	0.02	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.06	
125:						
Gridley taxadjunct loam	65	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f
						Clay 27 to 4
Calcic Haploxerolls sandy loam	20	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	SAR 4 to 13
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.03	EC 4 to 8 dS
						Saturation f

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
126:						
Liveoak sandy loam------	85	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Thickest layer a possible source	0.04	Saturation f
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.72	
127:						
Gridley taxadjunct loam	85	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f Clay 27 to 4
130:						
Eastbiggs loam----------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f Depth to par
133:						
Eastbiggs loam----------	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f Depth to par
Galt clay loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4 Depth to par
136:						
Duric Xerarents, cut----	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation < Clay 27 to 4
Duric Xerarents, fill---	30	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.04	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
136:						
Eastbiggs fine sandy loam, leveled	25	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation f
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to pan
138su:						
Liveoak sandy clay loam	85	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Saturation f
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.03	
139su:						
Liveoak taxadjunct loam, frequently flooded	45	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
Galt taxadjunct clay loam, frequently flooded	40	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to pan
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f Clay 27 to 4
143su:						
Marcum clay loam	45	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay 27 to 4
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
Gridley clay loam	40	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
149yu:						
Flanly sandy loam-------	80	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope 12 to
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen
150:						
Columbia stratified sand to fine sandy loam-----	85	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.01	
150su:						
Olashes sandy loam------	85	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.34	
151yu:						
Flanly sandy loam-------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen
152:						
Gianella fine sandy loam, frequently flooded----------	85	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Thickest layer a possible source	0.01	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.08	
153:						
Gianella sandy loam, frequently flooded-----	85	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Thickest layer a possible source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.01	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
154:						
Gianella silt loam, frequently flooded-----	85	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Sand fractio
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.10	
158:						
Gianella fine sandy loam, occasionally flooded----------	85	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.10	
160:						
Gianella loam, occasionally flooded---	85	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Thickest layer a possible source	0.02	Sand fractio
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.07	
161:						
Gianella fine sandy loam, rarely flooded---	90	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.10	
162:						
Gianella loam, rarely flooded----------	90	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Thickest layer a possible source	0.02	Sand fractio
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.07	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
163yu:						
Holillipah loamy sand---	85	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Thickest layer a possible source	0.07	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.10	
165yu:						
Holland loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
Hoda loam----------	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope > 15% pH from 4.5
Hotaw loam----------	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
173yu:						
Hotaw loam----------	45	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
Chawanakee gravelly sandy loam----------	20	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Rock fragmen Slope > 15%
Holland loam----------	15	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
175:						
Farwell clay loam, rarely flooded---------	85	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
176:						
Farwell loam, occasionally flooded---	85	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
176yu:						
Jocal loam--------------	80	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope 12 to
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	pH from 4.5 Rock fragmen Clay 27 to 4
177:						
Farwell silt loam, occasionally flooded---	85	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay 27 to 4
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
178:						
Arbuckle gravelly loam--	87	Fair source		Poor source		Poor source
		Bottom layer a possible source	0.25	Bottom layer not a source	0.00	Hard to recl
		Thickest layer a possible source	0.27	Thickest layer not a source	0.00	Rock fragmen
179:						
Moda taxadjunct loam----	65	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation Depth to par

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
179:						
Arbuckle gravelly loam--	20	Fair source		Poor source		Poor source
		Bottom layer a possible source	0.25	Bottom layer not a source	0.00	Hard to recl
		Thickest layer a possible source	0.27	Thickest layer not a source	0.00	Rock fragmer
180:						
Dodgeland silty clay loam, occasionally flooded----------	85	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
181:						
Dodgeland silty clay loam, frequently flooded----------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
188yu:						
Mariposa taxadjunct gravelly loam----------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmer
						Depth to bed
						pH from 4.5
189:						
Esquon silt loam, overwash----------	90	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
189yu:						
Mariposa taxadjunct gravelly loam----------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Depth to bed pH from 4.5
196yu:						
Mildred cobbly loam-----	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40% Depth to bed Rock fragmen
200:						
Parrott silt loam, occasionally flooded---	85	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
201:						
Parrott silt loam, frequently flooded-----	85	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
203:						
Kusalslough silty clay loam, occasionally flooded----------	85	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay 27 to 4
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
205:						
Parrott silt loam, frequently flooded-----	50	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
205:						
Vermet silt loam, frequently flooded-----	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4
206:						
Islandbar sandy loam----	60	Fair source		Fair source		Good source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.02	
		Bottom layer a possible source	0.88	Bottom layer a possible source	0.08	
Chawanakee gravelly sandy loam----------	30	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Rock fragmen
207:						
Islandbar sandy loam----	60	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.02	Slope > 15%
		Bottom layer a possible source	0.88	Bottom layer a possible source	0.08	
Chawanakee gravelly sandy loam----------	30	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Depth to bed
						Rock fragmen
208:						
Islandbar sandy loam----	60	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.02	Slope > 15%
		Bottom layer a possible source	0.88	Bottom layer a possible source	0.08	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
208:						
Chawanakee gravelly sandy loam----------	30	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Depth to bed Rock fragmen
209:						
Islandbar sandy loam----	60	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.02	Slope > 15%
		Bottom layer a possible source	0.88	Bottom layer a possible source	0.08	
Chawanakee gravelly sandy loam----------	30	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Depth to bed Rock fragmen
210:						
Featherfalls sandy loam	50	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Hard to recl
		Bottom layer a possible source	0.12	Thickest layer not a source	0.00	Rock fragmen
Islandbar sandy loam----	35	Fair source		Fair source		Good source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.02	
		Bottom layer a possible source	0.88	Bottom layer a possible source	0.08	
211:						
Featherfalls sandy loam	55	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer a possible source	0.12	Thickest layer not a source	0.00	Hard to recl Rock fragmen

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
211:						
Islandbar sandy loam----	35	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.02	Slope > 15%
		Bottom layer a possible source	0.88	Bottom layer a possible source	0.08	
212:						
Featherfalls sandy loam	55	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Hard to recl
		Bottom layer a possible source	0.12			Rock fragmer
Islandbar sandy loam----	35	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.02	Slope > 15%
		Bottom layer a possible source	0.88	Bottom layer a possible source	0.08	
213:						
Featherfalls sandy loam	45	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Hard to recl
		Bottom layer a possible source	0.12			Rock fragmer
Islandbar sandy loam----	35	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.02	Slope > 15%
		Bottom layer a possible source	0.88	Bottom layer a possible source	0.08	
214:						
Crystalhill gravelly coarse sandy loam------	35	Poor source		Fair source		Fair source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Slope 8 to 1
		Bottom layer not a source	0.00	Thickest layer a possible source	0.04	Rock fragmer

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
214:						
Oregongulch gravelly sandy loam	20	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.04	Hard to recl
		Bottom layer not a source	0.00	Thickest layer a possible source	0.04	Rock fragmen Depth to bed Slope 8 to 1
Craigsaddle coarse sandy loam	20	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.03	
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated
215:						
Crystalhill gravelly coarse sandy loam	35	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Slope > 15% Rock fragmen
		Bottom layer not a source	0.00	Thickest layer a possible source	0.04	
Oregongulch gravelly sandy loam	20	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.04	Slope > 15% Hard to recl
		Bottom layer not a source	0.00	Thickest layer a possible source	0.04	Rock fragmen Depth to bed
Craigsaddle coarse sandy loam	20	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.03	
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
216:						
Crystalhill gravelly coarse sandy loam------	35	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Slope > 15% Rock fragmen
		Bottom layer not a source	0.00	Thickest layer a possible source	0.04	
Oregongulch gravelly sandy loam-------------	20	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.04	Slope > 15% Hard to recl
		Bottom layer not a source	0.00	Thickest layer a possible source	0.04	Rock fragmen Depth to bed
Craigsaddle coarse sandy loam-------------	20	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.03	
Rock outcrop, trondhjemite-----------	10	Not rated		Not rated		Not rated
217:						
Crystalhill gravelly coarse sandy loam------	35	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Slope > 15% Rock fragmen
		Bottom layer not a source	0.00	Thickest layer a possible source	0.04	
Oregongulch gravelly sandy loam-------------	20	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.04	Slope > 15% Hard to recl
		Bottom layer not a source	0.00	Thickest layer a possible source	0.04	Rock fragmen Depth to bed

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
217:						
Craigsaddle coarse sandy loam	20	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.03	
Rock outcrop, trondhjemite	10	Not rated		Not rated		Not rated
218:						
Rock outcrop, quartz diorite	60	Not rated		Not rated		Not rated
Lithic Xerorthents gravelly sandy loam	20	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.04	Slope > 15% Rock fragmen
Chawanakee gravelly sandy loam	15	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Slope > 15% Rock fragmen
219:						
Rock outcrop, quartz diorite	60	Not rated		Not rated		Not rated
Lithic Xerorthents gravelly sandy loam	20	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.04	Depth to bed Rock fragmen
Chawanakee gravelly sandy loam	15	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Depth to bed Rock fragmen

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
220:						
Esquon clay, frequently flooded	60	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f
Clear Lake silty clay loam, overwash	30	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
221yu:						
Sites loam	85	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	pH from 4.5
222yu:						
Sites loam	85	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope 12 to
						pH from 4.5
225yu:						
Sites gravelly loam, bedrock substratum	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmer
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Hard to recl
						pH from 4.5
226yu:						
Sites gravelly loam, bedrock substratum	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmer
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Slope 12 to
						Hard to recl
						pH from 4.5

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
227yu:						
Sites gravelly loam, bedrock substratum-----	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Clay > 40% Hard to recl pH from 4.5
242yu:						
Surnuf loam----------	80	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope 12 to
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
243yu:						
Surnuf loam----------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
244yu:						
Surnuf loam----------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
245:						
Surnuf loam----------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
248yu:						
Trainer loam----------	85	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.03	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
250:						
Llanoseco, occasionally flooded	90	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
252:						
Whitecabin silty clay, occasionally flooded	60	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f
Ordferry silty clay, occasionally flooded	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation < Depth to par
252yu:						
Woodleaf gravelly loam	80	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Clay > 40% Depth to bed Slope 8 to 1
253yu:						
Woodleaf gravelly loam	80	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen Clay > 40% Depth to bed
255:						
Whitecabin silty clay loam, occasionally flooded	60	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	SAR 4 to 13 Saturation f

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
255: Ordferry silty clay, occasionally flooded---	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation Depth to par
256: Whitecabin silt loam, occasionally flooded---	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation
257: Llanoseco, frequently flooded----------	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40%
258: Codora, occasionally flooded----------	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source Clay 27 to
260: Ordferry silty clay, occasionally flooded---	90	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Clay > 40% Saturation Depth to par
280: Columbia taxadjunct stratified very fine sandy loam----------	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer a possible source	0.00 0.00	Poor source Saturation

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
290:						
Perkins gravelly loam---	90	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.50	Bottom layer a possible source	0.10	Hard to recl
300:						
Redsluff gravelly loam--	80	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
						No saturated depth of 3
301:						
Wafap gravelly loam-----	70	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Hard to recl
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Clay 27 to 4
						Saturation f
Hamslough clay----------	15	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Clay > 40%
				Thickest layer not a source	0.00	Saturation <
		Bottom layer a possible source	0.14			Rock fragmen
						Depth to par
302:						
Redtough loam-----------	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
						Rock fragmen
Redswale cobbly loam----	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
						Rock fragmen
303:						
Munjar gravelly loam----	60	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4
						Saturation f
						Depth to par

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
303:						
Tuscan taxadjunct gravelly clay loam-----	20	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Saturation <
				Thickest layer not a source	0.00	Clay 27 to 4
		Bottom layer a possible source	0.12			Rock fragmen
						Depth to par
Galt clay----------	10	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
						Depth to par
304:						
Redtough loam----------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope > 15%
						Rock fragmen
305:						
Redtough gravelly loam--	45	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
Redswale loam----------	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
						Rock fragmen
Anita, gravelly duripan	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Saturation <
						Rock fragmen
306:						
Duric Xerarents, fill---	50	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.04	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
306:						
Duric Xerarents, cut----	40	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer a possible source	0.03	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.04	Saturation <
307:						
Duric Xerarents clay loam, leveled----------	70	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
						Clay > 40%
310:						
Kimball loam----------	85	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
317:						
Thompsonflat loam-------	75	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Hard to recl
		Bottom layer a possible source	0.50	Thickest layer not a source	0.00	Rock fragmen
318:						
Thompsonflat fine sandy loam-------------------	50	Fair source		Fair source		Poor source
		Thickest layer a possible source	0.07	Bottom layer a possible source	0.04	Rock fragmen
		Bottom layer a possible source	0.29	Thickest layer a possible source	0.04	Hard to recl
Oroville gravelly fine sandy loam----------	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Saturation f
						Depth to par

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
320:						
Vistarobles sandy loam--	50	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.03	Saturation <
Redding loam----------	40	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation f
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to par
321:						
Durixeralfs, fine-loamy, gravelly fine sandy loam----------	50	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.25	Thickest layer not a source	0.00	Saturation f
						Depth to par
Durixeralfs, loamy-skeletal, gravelly fine sandy loam----------	20	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Depth to par
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Saturation <
						Rock fragmen
						Depth to bed
Typic Petraquepts silty clay----------	15	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Saturation <
						Rock fragmen
						Depth to bed
330:						
Wilsoncreek loam, occasionally flooded---	60	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
330:						
Trainer loam, occasionally flooded---	25	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.04	
331:						
Thompsonflat loam-------	85	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Hard to recl
		Bottom layer a possible source	0.50			Rock fragmer
335:						
Galt clay loam----------	85	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4
						Depth to par
336:						
Galt clay---------------	90	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
						Depth to par
337:						
Galt clay loam----------	85	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4
						Depth to par
338:						
Oxyaquic Xerofluvents silt loam---------------	90	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
339:						
Oxyaquic Xerofluvents sandy loam, frequently flooded	90	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Sand fractio
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.03	
340:						
Rock outcrop, Lovejoy basalt	35	Not rated		Not rated		Not rated
Thermalrocks very gravelly loam	25	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Depth to bed
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.12			pH from 4.5
Campbellhills gravelly loam	20	Fair source		Poor source		Poor source
		Thickest layer a possible source	0.01	Bottom layer not a source	0.00	Saturation <
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.14			Hard to recl
						Clay 27 to 4
341:						
Elsey loam	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f
						Depth to bed
Beatsonhollow gravelly loam	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
						pH from 4.5

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
341:						
Campbellhills gravelly loam	20	Fair source		Poor source		Poor source
		Thickest layer a possible source	0.01	Bottom layer not a source	0.00	Saturation <
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.14			Hard to recl
						Clay 27 to 4
Rock outcrop, Lovejoy basalt	20	Not rated		Not rated		Not rated
342:						
Thermalrocks very gravelly loam	40	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Depth to bed
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.12			Slope > 15%
						pH from 4.5
Beatsonhollow taxadjunct fine sandy loam	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
Rock outcrop, Lovejoy basalt	15	Not rated		Not rated		Not rated
343:						
Coalcanyon very cobbly loam	50	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
				Thickest layer not a source	0.00	Hard to recl
		Bottom layer not a source	0.00			Slope 8 to 1
Coonhollow gravelly loam	35	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
				Thickest layer not a source	0.00	Hard to recl
		Bottom layer not a source	0.00			Slope 8 to 1

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
344:						
Coalcanyon very cobbly loam	45	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Hard to recl
Coonhollow gravelly loam	30	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Hard to recl
Rock outcrop, Lovejoy basalt	15	Not rated		Not rated		Not rated
346:						
Cherotable loam	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmen
Elsey loam	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f
						Depth to bed
347:						
Haplic Palexeralfs loam	90	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Hard to recl
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
353:						
Cherokeespring gravelly silt loam	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
						Slope 12 to
						Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
355:						
Coalcanyon very cobbly loam	55	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragmer Hard to recl
Talus	35	Not rated		Not rated		Not rated
356:						
Coalcanyon very cobbly loam	45	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragmer Hard to recl
Rock outcrop, basalt cliffs	20	Not rated		Not rated		Not rated
Talus	20	Not rated		Not rated		Not rated
Coonhollow gravelly loam	10	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragmer Hard to recl
360:						
Typic Xerofluvents, coarse-loamy	45	Fair source Thickest layer a possible source Bottom layer a possible source	0.17 0.62	Fair source Thickest layer not a source Bottom layer a possible source	0.00 0.69	Poor source Hard to recl Rock fragmer
Typic Xerofluvents, sandy-skeletal	40	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.62	Fair source Bottom layer a possible source Thickest layer a possible source	0.66 0.69	Poor source Sand fractio Hard to recl Rock fragmer

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
361:						
Typic Xerofluvents, sandy-skeletal---------	85	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.66	Sand fractio
		Bottom layer a possible source	0.62	Thickest layer a possible source	0.69	Hard to recl Rock fragmen
362:						
Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.03	
Ultic Haploxeralfs, sandstone, low elevation, deep--------	25	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Sand fractio
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
363:						
Ultic Haploxeralfs, sandstone, low elevation, very deep---	60	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.03	
Ultic Haploxeralfs, sandstone, low elevation, deep--------	30	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope 12 to
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Sand fractio

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
364:						
Ultic Haploxeralfs, sandstone, low elevation, deep--------	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Sand fractio
Ultic Haploxeralfs, sandstone, low elevation, very deep---	40	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.03	Rock fragmen
365:						
Palexerults gravelly loam-------------------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
366:						
Palexerults gravelly loam-------------------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
370:						
Palexerults gravelly loam-------------------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
375:						
Wickscorner loam--------	80	Fair source		Poor source		Poor source
		Thickest layer a possible source	0.25	Bottom layer not a source	0.00	Hard to recl
		Bottom layer a possible source	0.50	Thickest layer not a source	0.00	Rock fragmen
						Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
376:						
Flagcanyon gravelly loam----------	50	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
				Thickest layer not a source	0.00	Depth to par
		Bottom layer not a source	0.00			Saturation f
Wickscorner loam--------	35	Fair source		Poor source		Poor source
		Thickest layer a possible source	0.25	Bottom layer not a source	0.00	Hard to recl
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.50			Clay 27 to 4
377:						
Flagcanyon taxadjunct fine sandy loam--------	55	Fair source		Fair source		Fair source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f
				Bottom layer a possible source	0.14	Depth to par
		Bottom layer a possible source	0.14			Rock fragmen
Durixeralfs, clayey-skeletal, loam---------	20	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to par
				Bottom layer a possible source	0.14	Clay > 40%
		Bottom layer a possible source	0.14			Saturation <
						Rock fragmen
Duraquerts gravelly clay----------	15	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
				Bottom layer a possible source	0.03	Saturation <
		Bottom layer a possible source	0.25			Depth to par
						Rock fragmen
400:						
Subaco taxadjunct clay--	85	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f
						SAR 4 to 13
						Depth to par

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
415:						
Ignord fine sandy loam--	90	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Bottom layer a possible source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.04	
416:						
Calcic Haploxerolls sandy loam----------	90	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	SAR 4 to 13
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.03	EC 4 to 8 dS Saturation f
418:						
Almendra loam----------	85	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
419:						
Conejo fine sandy loam, overwash----------	85	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay 27 to 4
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
420:						
Conejo clay loam--------	85	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Clay 27 to 4
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.03	
425:						
Vina fine sandy loam----	85	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Thickest layer a possible source	0.02	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.66	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
426:						
Vina loam----------	85	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
439:						
Oxyaquic Xerofluvents clay----------	85	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f
440:						
Oxyaquic Xerofluvents silt loam, frequently flooded----------	80	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation f
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
441:						
Oxyaquic Xerofluvents very fine sandy loam---	90	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation f
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
442:						
Durixerolls clay loam---	55	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation f
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to pan
						Clay 27 to 4
Haploxerolls clay loam--	30	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation f
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
443:						
Durixerolls loam--------	60	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation f
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to pan

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
443:						
Haploxerolls loam-------	25	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Saturation f
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.04	
445:						
Chico loam--------------	85	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
447:						
Charger fine sandy loam	80	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.03	Hard to recl
		Bottom layer a possible source	0.25	Bottom layer a possible source	0.10	
448:						
Haploxerolls clay loam--	75	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay 27 to 4
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
449:						
Haploxerolls loam-------	75	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	
500:						
Lofgren clay------------	45	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f
Blavo clay--------------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f
						Depth to par

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
501:						
Lofgren clay, occasionally flooded---	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Clay > 40% Saturation
Blavo clay, occasionally flooded---	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Clay > 40% Saturation Depth to par
502:						
Blavo silt loam, overwash, occasionally flooded----------	80	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Clay > 40% Saturation Depth to par
519:						
Edjobe silty clay-------	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Clay > 40% Saturation
520:						
Esquon clay----------	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Clay > 40% Saturation
Neerdobe clay----------	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Clay > 40% Saturation
521:						
Neerdobe silt loam, overwash----------	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	 0.00 0.08	Poor source Clay > 40% Saturation

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
522:						
Clear Lake silty clay loam, overwash	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
523:						
Esquon silty clay loam, overwash	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
525:						
Govstanford loam	85	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation f
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
526:						
Govstanford loam, occasionally flooded	85	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation f
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
528:						
Neerdobe clay loam	90	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation f
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to par
						Clay 27 to 4
550:						
Dunstone loam, dry	60	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Depth to bed
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	
Loafercreek silt loam, dry	20	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
551:						
Dunstone loam, dry------	35	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Depth to bed
		Bottom layer not a source	0.00			
Lomarica loam-----------	15	Fair source		Poor source		Poor source
		Thickest layer a possible source	0.06	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.88			Clay 27 to 4
						Depth to bed
Argonaut taxadjunct loam	15	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Depth to bed
						Rock fragmen
552:						
Dunstone gravelly loam--	45	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
Loafercreek gravelly loam-------------------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
553:						
Dunstone gravelly loam--	45	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
Loafercreek gravelly loam-------------------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Depth to bed

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
554:						
Dunstone gravelly loam--	45	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmer
Loafercreek gravelly loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmer Depth to bed
555:						
Dunstone gravelly loam--	45	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmer
Loafercreek gravelly loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmer Depth to bed
556:						
Mounthope loam----------	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmer
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
Hartsmill gravelly loam	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Hard to recl
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4 Rock fragmer
557:						
Mounthope loam----------	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmer Hard to recl

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
557:						
Hartsmill gravelly loam	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to recl Clay 27 to 4 Rock fragmen
558:						
Hartsmill gravelly loam	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to recl Clay 27 to 4 Rock fragmen
Mounthope loam----------	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragmen Hard to recl
559:						
Hartsmill gravelly loam	55	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to recl Clay 27 to 4 Rock fragmen
Mounthope loam----------	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragmen Hard to recl
560:						
Hartsmill gravelly loam	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Hard to recl Clay 27 to 4 Rock fragmen
Mounthope loam----------	30	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragmen Hard to recl

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
561:						
Bigridge loam----------	50	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Hard to recl
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen
Minniecreek loam--------	35	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
562:						
Bigridge loam----------	50	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmen
Minniecreek loam--------	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
563:						
Bigridge loam----------	50	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmen
Minniecreek loam--------	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
564:						
Bigridge loam----------	50	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmen
Minniecreek loam--------	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
565:						
Dunstone loam, dry------	35	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Depth to bed
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	
Argonaut taxadjunct loam	30	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
Sunnyslope loam---------	20	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.62	Thickest layer not a source	0.00	Depth to bed
566:						
Dunstone loam, dry------	45	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Depth to bed
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	
Loafercreek silt loam, dry----------	20	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
Katskillhill loam-------	15	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
567:						
Dunstone loam, dry------	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Depth to bed
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
567:						
Loafercreek silt loam, dry	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Fair source Depth to bed
Argonaut taxadjunct loam	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Clay > 40% Depth to bed Rock fragmen
577:						
Parkshill coarse sandy loam	40	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Good source
Flanly loam	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Fair source Depth to bed
Hurleton gravelly sandy loam	20	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	 0.00 0.62	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Rock fragmen Depth to bed Slope 8 to 1
578:						
Flanly loam	45	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Fair source Depth to bed
Swedesflat cobbly fine sandy loam	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Fair source Thickest layer not a source Bottom layer a possible source	 0.00 0.04	Poor source Depth to bed Rock fragmen Slope 8 to 1

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
580:						
Surnuf taxadjunct loam--	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
Griffgulch very gravelly silt loam-----	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmer
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Hard to recl
Rock outcrop, metavolcanic----------	20	Not rated		Not rated		Not rated
581:						
Surnuf taxadjunct loam--	65	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
Griffgulch very gravelly silt loam-----	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmer
						Clay > 40%
						Hard to recl
582:						
Surnuf taxadjunct loam--	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
Griffgulch very gravelly silt loam-----	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmer
						Clay > 40%
						Hard to recl

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
583:						
Surnuf taxadjunct loam--	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
Griffgulch very gravelly silt loam-----	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Clay > 40%
						Hard to recl
584:						
Flanly loam------------	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
Swedesflat cobbly fine sandy loam------------	30	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.04	Depth to bed
						Rock fragmen
Rackerby very gravelly sandy loam------------	25	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope > 15%
				Bottom layer a possible source	0.03	Depth to bed
		Bottom layer not a source	0.00			Rock fragmen
585:						
Flanly loam------------	45	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
Sommeyflat loam---------	35	Poor source		Poor source		Good source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
586:						
Sommeyflat loam---------	45	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
Mounthope loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Hard to recl
587:						
Sommeyflat loam---------	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
Mounthope loam----------	30	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Hard to recl
Hurleton gravelly sandy loam-------------------	25	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer a possible source	0.62	Thickest layer not a source	0.00	Rock fragmen
						Depth to bed
588:						
Ultic Haploxeralfs, thermic, high terrace--	95	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.29	Thickest layer not a source	0.00	Saturation f
589:						
Ultic Haploxeralfs, thermic, high terrace--	95	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer a possible source	0.29	Thickest layer not a source	0.00	Rock fragmen
						Saturation f

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
590:						
Vistarobles sandy loam--	30	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.03	Saturation <
Redding loam----------	25	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation f
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to par
Argonaut taxadjunct loam	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmer
Haploxererts gravelly silty clay----------	15	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation < Rock fragmer
603:						
Oroville gravelly fine sandy loam----------	30	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmer
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Saturation f Depth to par
Thermalito sandy loam---	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmer
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f Depth to par
Fernandez sandy loam----	15	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmer
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
603:						
Thompsonflat fine sandy loam----------	15	Fair source		Fair source		Poor source
		Thickest layer a possible source	0.07	Bottom layer a possible source	0.04	Rock fragmen
		Bottom layer a possible source	0.29	Thickest layer a possible source	0.04	Hard to recl
605:						
Duric Xerarents fine sandy loam, leveled----	75	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to pan
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
						Rock fragmen
Oroville gravelly fine sandy loam----------	20	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Saturation f
						Depth to pan
606:						
Redtough loam----------	45	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to pan
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
						Rock fragmen
Fallager loam----------	30	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to pan
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Saturation <
						Rock fragmen
Anita, gravelly duripan	15	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to pan
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Saturation <
						Rock fragmen

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
609:						
Anita, gravelly duripan	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to par
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Saturation <
						Rock fragmen
Tuscan taxadjunct gravelly clay loam-----	40	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Saturation <
				Thickest layer not a source	0.00	Clay 27 to 4
		Bottom layer a possible source	0.12			Rock fragmen
						Depth to par
614:						
Doemill gravelly loam---	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
Jokerst very cobbly loam	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
615:						
Doemill gravelly loam---	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
Jokerst very cobbly loam	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
616:						
Jokerst very cobbly loam	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
						Slope 8 to 1

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
616:						
Doemill gravelly loam---	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Saturation f
						Slope 8 to 1
Typic Haploxeralfs gravelly loam----------	15	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Hard to recl
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen
						Slope 12 to
						Clay 27 to 4
617:						
Doemill gravelly loam---	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
						Saturation f
Jokerst very cobbly loam	30	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
						Depth to bed
						Rock fragmen
Typic Haploxeralfs gravelly loam----------	20	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmen
						Clay 27 to 4
619:						
Carhart taxadjunct clay	90	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
						Depth to bed
						Rock fragmen

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
620:						
Doemill gravelly loam---	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen
Jokerst very cobbly loam	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen
Ultic Haploxeralfs, thermic, gravelly loam	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Saturation f Clay 27 to 4
621:						
Doemill gravelly loam---	30	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Saturation f Slope 8 to 1
Jokerst very cobbly loam	30	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen Slope 8 to 1
Ultic Haploxeralfs, thermic, gravelly loam	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Slope 8 to 1 Saturation f Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
622:						
Xerorthents, shallow----	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen Clay 27 to 4
Typic Haploxeralfs gravelly loam----------	30	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Hard to recl Rock fragmen Clay 27 to 4
Rock outcrop, mudflow-breccia cliffs---------	15	Not rated		Not rated		Not rated
623:						
Xerorthents, shallow----	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen Clay 27 to 4
Typic Haploxeralfs gravelly loam----------	25	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Hard to recl Rock fragmen Clay 27 to 4
Rock outcrop, mudflow-breccia cliffs---------	20	Not rated		Not rated		Not rated
624:						
Ultic Haploxeralfs, mesic, gravelly loam---	60	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Hard to recl
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
624:						
Rockstripe very gravelly loam----------	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
625:						
Ultic Haploxeralfs, mesic, gravelly loam---	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmen
						Clay 27 to 4
Rockstripe very gravelly loam----------	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
626:						
Ultic Haploxeralfs gravelly loam----------	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen
						Clay 27 to 4
Rockstripe very gravelly loam----------	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
Rock outcrop, mudflow-breccia cliffs---------	15	Not rated		Not rated		Not rated
627:						
Ultic Haploxeralfs gravelly loam----------	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen
						Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
627:						
Rockstripe very gravelly loam----------	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen
Rock outcrop, mudflow-breccia cliffs---------	15	Not rated		Not rated		Not rated
628:						
Rockstripe very gravelly loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen
Ultic Haploxeralfs gravelly loam----------	35	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen Clay 27 to 4
Rock outcrop, mudflow-breccia cliffs---------	20	Not rated		Not rated		Not rated
629:						
Slideland gravelly loam	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Hard to recl
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Clay 27 to 4 Slope 8 to 1
630:						
Slideland gravelly loam	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl Rock fragmen Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
631:						
Slideland gravelly loam	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl Rock fragmen Clay 27 to 4
632:						
Ultic Haploxeralfs, conglomerate, very deep	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Hard to recl
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Slope 12 to Clay 27 to 4
Ultic Haploxeralfs, conglomerate, moderately deep--------	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Depth to bed
633:						
Ultic Haploxeralfs, conglomerate, very deep	60	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl Rock fragmen Clay 27 to 4
Ultic Haploxeralfs, conglomerate, moderately deep--------	30	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen Depth to bed

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
634:						
Ultic Haploxeralfs, conglomerate, very deep	60	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl Rock fragmen Clay 27 to 4
Ultic Haploxeralfs, conglomerate, moderately deep--------	30	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen Depth to bed
635:						
Ultic Haploxeralfs, conglomerate, very deep	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl Rock fragmen Clay 27 to 4
Ultic Haploxeralfs, conglomerate, moderately deep--------	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen Depth to bed
636:						
Ultic Haploxeralfs, conglomerate, moderately deep--------	50	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen Depth to bed
Ultic Haploxeralfs, conglomerate, very deep	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl Rock fragmen Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
637:						
Ultic Haploxeralfs, sandstone	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Hard to recl
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmer
638:						
Ultic Haploxeralfs, sandstone	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmer
639:						
Ultic Haploxeralfs, sandstone	75	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmer
640:						
Ultic Haploxeralfs, sandstone	75	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmer
641:						
Ultic Haploxeralfs, sandstone	75	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmer
642:						
Chinacamp gravelly loam	70	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmer
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
						Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
643:						
Chinacamp gravelly loam	70	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl Clay 27 to 4
644:						
Chinacamp gravelly loam	70	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl Clay 27 to 4
645:						
Chinacamp gravelly loam	70	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl Clay 27 to 4
646:						
Coalcanyon taxadjunct very gravelly loam-----	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl Clay 27 to 4
647:						
Coalcanyon taxadjunct very gravelly loam-----	75	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl Clay 27 to 4
648:						
Coalcanyon taxadjunct very gravelly loam-----	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
649:						
Coalcanyon taxadjunct very gravelly loam-----	75	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmer
						Hard to recl
						Clay 27 to 4
650:						
Schott very gravelly loam-------------------	65	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmer
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Hard to recl
						Clay 27 to 4
651:						
Schott very gravelly loam-------------------	65	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmer
						Hard to recl
						Clay 27 to 4
652:						
Schott very gravelly loam-------------------	65	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmer
						Hard to recl
						Clay 27 to 4
Rock outcrop, mudflow breccia----------------	20	Not rated		Not rated		Not rated
654:						
Coridge bouldery loam---	70	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmer
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Saturation f
						Clay 27 to 4
Rock outcrop, Cohasset basalt----------------	20	Not rated		Not rated		Not rated

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
655:						
Coridge bouldery loam---	70	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmer
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Saturation f Clay 27 to 4 Slope 8 to 1
Rock outcrop, Cohasset basalt----------	20	Not rated		Not rated		Not rated
656:						
Rock outcrop, basalt cliffs----------	40	Not rated		Not rated		Not rated
Coalcanyon taxadjunct very gravelly loam-----	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmer Hard to recl Clay 27 to 4
657:						
Bonneyridge sandy loam--	35	Poor source		Fair source		Good source
		Bottom layer not a source	0.00	Bottom layer a possible source	0.14	
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.14	
Chawanakee gravelly sandy loam----------	30	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Rock fragmer
Rock outcrop, quartz diorite----------	20	Not rated		Not rated		Not rated

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
658:						
Bonneyridge sandy loam--	35	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Bottom layer a possible source	0.14	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.14	
Chawanakee gravelly sandy loam----------	30	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Depth to bed Rock fragmen
Rock outcrop, quartz diorite----------	25	Not rated		Not rated		Not rated
659:						
Bonneyridge sandy loam--	35	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Bottom layer a possible source	0.14	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.14	
Chawanakee gravelly sandy loam----------	30	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Depth to bed Rock fragmen
Rock outcrop, quartz diorite----------	25	Not rated		Not rated		Not rated
660:						
Bonneyridge sandy loam--	30	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Bottom layer a possible source	0.14	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.14	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
660:						
Chawanakee gravelly sandy loam----------	30	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Depth to bed Rock fragmen
Rock outcrop, quartz diorite----------	30	Not rated		Not rated		Not rated
661:						
Millerridge gravelly sandy clay loam--------	45	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay 27 to 4
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen
Boxrobber cobbly sandy clay loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Clay 27 to 4
662:						
Millerridge gravelly sandy clay loam--------	45	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4 Depth to bed Rock fragmen
Boxrobber cobbly sandy clay loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
663:						
Millerridge gravelly sandy clay loam--------	45	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4 Depth to bed Rock fragmen
Boxrobber cobbly sandy clay loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen Clay 27 to 4
664:						
Millerridge gravelly sandy clay loam--------	45	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4 Depth to bed Rock fragmen
Boxrobber cobbly sandy clay loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen Clay 27 to 4
665:						
Surnuf gravelly loam----	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl
Bigridge loam-----------	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source Thickest layer not a source	0.00 0.00	Hard to recl Rock fragmen
		Bottom layer not a source	0.00			

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
666:						
Surnuf gravelly loam----	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Rock fragmen
						Hard to recl
Bigridge loam----------	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmen
667:						
Surnuf gravelly loam----	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Rock fragmen
						Hard to recl
Bigridge loam----------	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmen
668:						
Surnuf gravelly loam----	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Rock fragmen
						Hard to recl
Bigridge loam----------	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmen
669:						
Oroshore gravelly loam--	35	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.14	Thickest layer not a source	0.00	Depth to bed
						Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
669:						
Mounthope loam----------	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
Dunstone gravelly loam--	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
670:						
Oroshore gravelly loam--	35	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer a possible source	0.14	Thickest layer not a source	0.00	Rock fragmen
						Depth to bed
						Clay 27 to 4
Mounthope loam----------	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Hard to recl
Dunstone gravelly loam--	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
671:						
Oroshore gravelly loam--	35	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer a possible source	0.14	Thickest layer not a source	0.00	Rock fragmen
						Depth to bed
						Clay 27 to 4
Mounthope loam----------	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Hard to recl
Dunstone gravelly loam--	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
672:						
Oroshore gravelly loam--	30	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.14			Depth to bed
						Clay 27 to 4
Mounthope loam----------	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Hard to recl
Dunstone gravelly loam--	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
674:						
Chawanakee gravelly sandy loam----------	30	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Depth to bed
						Rock fragmen
Bonneyridge sandy loam--	30	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Bottom layer a possible source	0.14	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.14	
Rock outcrop, quartz diorite----------	30	Not rated		Not rated		Not rated
675:						
Clearhayes sandy clay loam----------	70	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
				Thickest layer not a source	0.00	Hard to recl
		Bottom layer not a source	0.00			Saturation f
						Sand fractio

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
675:						
Hamslough clay----------	15	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Clay > 40%
				Thickest layer not a source	0.00	Saturation <
		Bottom layer a possible source	0.14			Rock fragmen
						Depth to pan
676:						
Carhart clay----------	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation f
						Depth to bed
Anita taxadjunct clay---	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation <
						Depth to bed
677:						
Tuscan gravelly loam----	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Depth to pan
				Thickest layer not a source	0.00	Saturation <
		Bottom layer not a source	0.00			Clay > 40%
						Rock fragmen
						Depth to bed
Fallager loam----------	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to pan
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Saturation <
						Rock fragmen
						Depth to bed
Anita, gravelly duripan	15	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to pan
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Saturation <
						Rock fragmen
						Depth to bed

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
679:						
Lucksev loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Clay > 40%
Butteside gravelly loam	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Rock fragmen
Carhart clay----------	15	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Saturation Depth to bed
680:						
Lucksev loam----------	45	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Clay > 40%
Butteside gravelly loam	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40% Depth to bed Rock fragmen
683:						
Typic Haploxeralfs, magnesic, low elevation	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4 Depth to bed
Earlal very gravelly loam----------	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed Clay 27 to 4 Slope 8 to 1

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
683:						
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated
684:						
Typic Haploxeralfs, magnesic, low elevation	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Clay 27 to 4 Depth to bed
Earlal very gravelly loam	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Depth to bed Clay 27 to 4
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated
685:						
Bosquejo taxadjunct, gravelly substratum	70	Fair source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Clay > 40%
		Thickest layer a possible source	0.09	Bottom layer a possible source	0.03	Hard to recl Saturation f
686:						
Redsluff taxadjunct clay loam	70	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Hard to recl
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Clay 27 to 4
687:						
Xerorthents, shallow	45	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
687:						
Typic Haploxeralfs						
gravelly loam----------	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Hard to recl
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Slope 12 to
						Clay 27 to 4
700:						
Retsongulch very						
gravelly sandy loam----	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope > 15%
				Bottom layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Depth to bed
						pH from 4.5
Flumewall gravelly						
sandy loam------------	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
						Rock fragmen
701:						
Powellton gravelly loam	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
Obstruction gravelly						
sandy loam------------	30	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Hard to recl
702:						
Cerpone gravelly loam---	50	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
				Thickest layer not a source	0.00	Hard to recl
		Bottom layer a possible source	0.38			Slope 8 to 1
						Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
702:						
Typic Haploxeralfs, magnesic, very gravelly loam	20	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Rock fragmen Hard to recl Clay > 40% Slope 8 to 1
Earlal very gravelly loam	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Rock fragmen Depth to bed Clay 27 to 4 Slope 8 to 1
703:						
Cerpone gravelly loam	30	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	 0.00 0.38	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Slope > 15% Rock fragmen Hard to recl Clay 27 to 4
Typic Haploxeralfs, magnesic, very gravelly loam	30	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Slope > 15% Rock fragmen Hard to recl Clay > 40%
Earlal very gravelly loam	15	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Slope > 15% Rock fragmen Depth to bed Clay 27 to 4
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
704:						
Typic Haploxeralfs, magnesic, very gravelly loam	40	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragmer Hard to recl Clay > 40%
Earlal very gravelly loam	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragmer Depth to bed Clay 27 to 4
Cerpone gravelly loam	15	Fair source Thickest layer not a source due to fines or thin layer Bottom layer a possible source	0.00 0.38	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragmer Hard to recl Clay 27 to 4
Rock outcrop, serpentinite	15	Not rated		Not rated		Not rated
705:						
Typic Haploxeralfs, magnesic, very gravelly loam	35	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragmer Hard to recl Clay > 40%
Earlal very gravelly loam	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragmer Depth to bed Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
705:						
Cerpone gravelly loam---	15	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.38			Hard to recl
						Clay 27 to 4
Rock outcrop, serpentinite----------	15	Not rated		Not rated		Not rated
711:						
Dixmine very gravelly loam----------	45	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
				Thickest layer not a source	0.00	Hard to recl
		Bottom layer not a source	0.00			Clay 27 to 4
Toadtown loam----------	40	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay 27 to 4
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	pH from 4.5
712:						
Dixmine very gravelly loam----------	50	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Hard to recl
						Clay 27 to 4
Toadtown loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4
						pH from 4.5
713:						
Dixmine very gravelly loam----------	50	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Hard to recl
						Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
713:						
Toadtown loam----------	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4 pH from 4.5
714:						
Dixmine very gravelly loam--------------------	50	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl Clay 27 to 4
Toadtown loam----------	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4 pH from 4.5
715:						
Logtrain gravelly loam--	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl pH from 4.5
Bottlehill very gravelly loam----------	30	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer a possible source	0.25	Thickest layer not a source	0.00	Rock fragmen Depth to bed pH from 4.5
						Clay 27 to 4
Walkermine very gravelly loam----------	20	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen Depth to bed

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
716:						
Griffgulch very gravelly silt loam-----	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40% Hard to recl
Surnuf gravelly loam----	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl
717:						
Griffgulch very gravelly silt loam-----	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Clay > 40% Hard to recl
Surnuf gravelly loam----	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40% Rock fragmen Hard to recl
718:						
Griffgulch very gravelly silt loam-----	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Clay > 40% Hard to recl
Surnuf gravelly loam----	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40% Rock fragmen Hard to recl

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
718:						
Spine taxadjunct very cobbly loam----------	15	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Depth to bed
719:						
Griffgulch very gravelly silt loam-----	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Clay > 40%
						Hard to recl
Surnuf gravelly loam----	30	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Rock fragmen
						Hard to recl
Spine taxadjunct very cobbly loam----------	20	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Depth to bed
720:						
Dystroxerepts extremely gravelly loam----------	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Depth to bed
Haploxeralfs very gravelly loam----------	30	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Hard to recl
						Clay 27 to 4
Rock outcrop, metavolcanic----------	15	Not rated		Not rated		Not rated

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
721:						
Haploxerands, granitic till, medial sandy loam	70	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Hard to recl
				Thickest layer a possible source	0.05	Slope 12 to
		Bottom layer not a source	0.00			Rock fragmer
722:						
Haploxerands, granitic till, medial sandy loam	70	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer a possible source	0.05	Hard to recl
		Bottom layer not a source	0.00			Rock fragmer
723:						
Haploxerands, granitic till, medial sandy loam	70	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer a possible source	0.05	Hard to recl
		Bottom layer not a source	0.00			Rock fragmer
724:						
Haploxerands, volcanic till, cobbly coarse sandy loam----------	75	Poor source		Fair source		Fair source
		Bottom layer not a source	0.00	Bottom layer a possible source	0.03	Rock fragmer
		Thickest layer not a source due to fines or thin layer	0.00			Slope 8 to 1
				Thickest layer a possible source	0.03	Hard to recl
725:						
Haploxerands, volcanic till, cobbly coarse sandy loam----------	75	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Bottom layer a possible source	0.03	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00			Rock fragmer
				Thickest layer a possible source	0.03	Hard to recl

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
726:						
Haploxerands, volcanic till, cobbly coarse sandy loam----------	75	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.03 0.03	Poor source Slope > 15% Rock fragmer Hard to recl
727:						
Bonneyridge sandy loam--	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Good source
728:						
Bonneyridge sandy loam--	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Poor source Slope > 15%
729:						
Bonneyridge sandy loam--	85	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Poor source Slope > 15%
730:						
Tusccoll gravelly loam--	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragmer Hard to recl
Schott very gravelly loam----------	25	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Poor source Slope > 15% Rock fragmer Hard to recl Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
731:						
Tusccoll gravelly loam--	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Hard to recl
Schott very gravelly loam--	35	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen
						Hard to recl
						Clay 27 to 4
732:						
Bonepile taxadjunct, duripan substratum-----	90	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00	Thickest layer a possible source	0.04	Hard to recl
733:						
Haploxeralfs, terrace, gravelly loam----------	75	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Hard to recl
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Clay 27 to 4
734:						
Haploxerands medial sandy loam----------	55	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Bottom layer a possible source	0.05	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.05	Rock fragmen
Aquic Xerofluvents peaty very fine sandy loam----------	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
735:						
Fluvaquents, loamy------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
801:						
Obstruction gravelly sandy loam----------	70	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope 8 to 1
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl
802:						
Obskel very gravelly sandy loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl
Obstruction gravelly sandy loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl
803:						
Obskel very gravelly sandy loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl
Obstruction gravelly sandy loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
804:						
Obskel very gravelly sandy loam----------	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl
Obstruction gravelly sandy loam----------	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen Hard to recl
Retsongulch very gravelly sandy loam----	20	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen Depth to bed pH from 4.5
805:						
Bottlehill very gravelly loam----------	50	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.25	Thickest layer not a source	0.00	Depth to bed pH from 4.5 Clay 27 to 4
Walkermine very gravelly loam----------	20	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Depth to bed Slope 12 to
Logtrain gravelly loam--	20	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Hard to recl pH from 4.5

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
806:						
Bottlehill very gravelly loam----------	50	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.25			Depth to bed
						pH from 4.5
						Clay 27 to 4
Walkermine very gravelly loam----------	20	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Depth to bed
Logtrain gravelly loam--	20	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Hard to recl
						pH from 4.5
807:						
Bottlehill very gravelly loam----------	35	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.25			Depth to bed
						pH from 4.5
						Clay 27 to 4
Logtrain gravelly loam--	30	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Hard to recl
						pH from 4.5
Walkermine very gravelly loam----------	25	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Depth to bed

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
808:						
Bottlehill very gravelly loam----------	45	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.25			Depth to bed
						pH from 4.5
						Clay 27 to 4
Walkermine very gravelly loam----------	20	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Depth to bed
Logtrain gravelly loam--	20	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Hard to recl
						pH from 4.5
809:						
Walkermine very gravelly loam----------	45	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Depth to bed
Bottlehill very gravelly loam----------	15	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.25			Depth to bed
						pH from 4.5
						Clay 27 to 4
Logtrain gravelly loam--	15	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Hard to recl
						pH from 4.5

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
809:						
Rock outcrop, metavolcanic----------	15	Not rated		Not rated		Not rated
810:						
Dixmine very gravelly loam----------	35	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen
						Hard to recl
						Clay 27 to 4
Mac gravelly loam-------	25	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer a possible source	0.50	Thickest layer not a source	0.00	Rock fragmen
						pH from 4.5
						Depth to bed
Spine very gravelly loam----------	25	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer a possible source	0.62	Thickest layer not a source	0.00	Rock fragmen
						Depth to bed
811:						
Powellton gravelly loam	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
Toadtown loam----------	40	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay 27 to 4
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	pH from 4.5
812:						
Powellton gravelly loam	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
812:						
Toadtown loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4 pH from 4.5
813:						
Powellton gravelly loam	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
Toadtown loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4 pH from 4.5
814:						
Mountyana gravelly loam	80	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Hard to recl
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen Clay 27 to 4 Slope 8 to 1 pH from 4.5
815:						
Mountyana gravelly loam	80	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Hard to recl Rock fragmen Clay 27 to 4 pH from 4.5
817:						
Lydon very gravelly medial coarse sandy loam----------	80	Fair source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer a possible source	0.07	Thickest layer not a source	0.00	Depth to bed

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
818:						
Lydon very gravelly medial coarse sandy loam	75	Fair source Bottom layer not a source Thickest layer a possible source	 0.00 0.07	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Slope > 15% Rock fragmen Depth to bed
819:						
Lydon very gravelly medial coarse sandy loam	65	Fair source Bottom layer not a source Thickest layer a possible source	 0.00 0.07	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Slope > 15% Rock fragmen Depth to bed
Rock outcrop, mudflow breccia	20	Not rated		Not rated		Not rated
820:						
Lydon very gravelly medial coarse sandy loam	60	Fair source Bottom layer not a source Thickest layer a possible source	 0.00 0.07	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Slope > 15% Rock fragmen Depth to bed
Rock outcrop, mudflow breccia	25	Not rated		Not rated		Not rated
821:						
Lydon very gravelly medial coarse sandy loam	55	Fair source Bottom layer not a source Thickest layer a possible source	 0.00 0.07	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Slope > 15% Rock fragmen Depth to bed
Rock outcrop, mudflow breccia	30	Not rated		Not rated		Not rated
822:						
Bonepile gravelly medial loam	85	Poor source Thickest layer not a source due to fines or thin layer Bottom layer not a source	 0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	 0.00 0.00	Poor source Rock fragmen Hard to recl pH from 4.5

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
823:						
Bonepile gravelly medial loam	85	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen
						Hard to recl
						pH from 4.5
824:						
Beecee very gravelly medial loam	85	Fair source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer a possible source	0.11	Thickest layer not a source	0.00	Rock fragmen
						Hard to recl
825:						
Beecee very gravelly medial loam	60	Fair source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer a possible source	0.11	Thickest layer not a source	0.00	Rock fragmen
						Hard to recl
Lydon very gravelly medial coarse sandy loam	20	Fair source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer a possible source	0.07	Thickest layer not a source	0.00	Rock fragmen
						Depth to bed
826:						
Redbone gravelly medial sandy loam	80	Fair source		Fair source		Poor source
		Thickest layer a possible source	0.07	Bottom layer a possible source	0.05	Hard to recl
		Bottom layer a possible source	0.25	Thickest layer a possible source	0.05	Rock fragmen
						Slope 8 to 1
827:						
Redbone gravelly medial sandy loam	80	Fair source		Fair source		Poor source
		Thickest layer a possible source	0.07	Bottom layer a possible source	0.05	Slope > 15%
		Bottom layer a possible source	0.25	Thickest layer a possible source	0.05	Hard to recl
						Rock fragmen

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
829:						
Paradiso loam----------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
830:						
Paradiso loam----------	75	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
831:						
Surnuf gravelly loam----	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Hard to recl
Bigridge loam----------	30	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Hard to recl
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen
Spine very gravelly loam----------	15	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.62	Thickest layer not a source	0.00	Depth to bed
						Slope 8 to 1
832:						
Surnuf gravelly loam----	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Rock fragmen
						Hard to recl
Bigridge loam----------	30	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmen

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
832:						
Spine very gravelly loam	15	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.62			Depth to bed
833:						
Surnuf gravelly loam	60	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Rock fragmen
						Hard to recl
Bigridge loam	15	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Hard to recl
		Bottom layer not a source	0.00			Rock fragmen
Spine very gravelly loam	15	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.62			Depth to bed
834:						
Hietanen gravelly loam	50	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
Mac gravelly loam	30	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmen
				Thickest layer not a source	0.00	pH from 4.5
		Bottom layer a possible source	0.50			Depth to bed

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
835:						
Hietanen gravelly loam--	60	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
Mac gravelly loam-------	20	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.50			pH from 4.5
						Depth to bed
836:						
Hietanen gravelly loam--	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
Mac gravelly loam-------	20	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.50			pH from 4.5
						Depth to bed
Spine very gravelly loam-------------------	15	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.62			Depth to bed
837:						
Hietanen gravelly loam--	35	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
Spine very gravelly loam-------------------	25	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.62			Depth to bed

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
837:						
Mac gravelly loam-------	20	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.50			pH from 4.5
						Depth to bed
838:						
Dixmine very gravelly loam-------------------	35	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer not a source	0.00			Hard to recl
						Clay 27 to 4
Spine very gravelly loam-------------------	25	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.62			Depth to bed
Mac gravelly loam-------	25	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.50			pH from 4.5
						Depth to bed
839:						
Chawanakee gravelly sandy loam-------------	55	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Depth to bed
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Rock fragmen
						Slope 8 to 1
Billscabin gravelly sandy loam-------------	35	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Bottom layer a possible source	0.08	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00			Hard to recl
				Thickest layer a possible source	0.08	Slope 8 to 1

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
841:						
Billscabin gravelly sandy loam----------	50	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.08 0.08	Poor source Slope > 15% Rock fragmen Hard to recl
Bonneyridge sandy loam--	35	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Poor source Slope > 15%
842:						
Billscabin gravelly sandy loam----------	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.08 0.08	Poor source Slope > 15% Rock fragmen Hard to recl
Bonneyridge sandy loam--	25	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Poor source Slope > 15%
846:						
Bonneyridge sandy loam--	60	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Fair source Bottom layer a possible source Thickest layer a possible source	0.14 0.14	Good source
Lewisflat loam----------	20	Poor source Bottom layer not a source Thickest layer not a source due to fines or thin layer	0.00 0.00	Poor source Bottom layer not a source Thickest layer not a source	0.00 0.00	Fair source pH from 4.5

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
847:						
Bonneyridge sandy loam--	60	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Bottom layer a possible source	0.14	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.14	
Lewisflat loam----------	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	pH from 4.5
848:						
Bonneyridge sandy loam--	60	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Bottom layer a possible source	0.14	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.14	
Lewisflat loam----------	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	pH from 4.5
850:						
Lewisflat loam----------	85	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	pH from 4.5
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
851:						
Lewisflat loam----------	80	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	pH from 4.5
852:						
Lewisflat loam----------	75	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	pH from 4.5

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
860:						
Toadtown gravelly loam--	60	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	
Powellton silt loam-----	20	Poor source		Poor source		Fair source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	pH from 4.5
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay 27 to 4
861:						
Toadtown gravelly loam--	60	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
Powellton silt loam-----	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	pH from 4.5
						Clay 27 to 4
862:						
Toadtown gravelly loam--	60	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
Powellton silt loam-----	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	pH from 4.5
						Clay 27 to 4
863:						
Toadtown gravelly loam--	60	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
Powellton silt loam-----	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	pH from 4.5
						Clay 27 to 4

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
880:						
Sites taxadjunct gravelly loam----------	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
Jocal taxadjunct gravelly loam----------	35	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Hard to recl
		Bottom layer a possible source	0.75	Thickest layer not a source	0.00	Rock fragmen
881:						
Sites taxadjunct gravelly loam----------	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Rock fragmen
Jocal taxadjunct gravelly loam----------	35	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer a possible source	0.75	Thickest layer not a source	0.00	Hard to recl
						Rock fragmen
882:						
Sites taxadjunct gravelly loam----------	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
						Rock fragmen
Jocal taxadjunct gravelly loam----------	35	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer a possible source	0.75	Thickest layer not a source	0.00	Hard to recl
						Rock fragmen

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
883:						
Sites taxadjunct gravelly loam----------	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40% Rock fragmer
Jocal taxadjunct gravelly loam----------	40	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer a possible source	0.75	Thickest layer not a source	0.00	Hard to recl Rock fragmer
885:						
Rogerville silt loam----	75	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Clay > 40%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Hard to recl Rock fragmer
886:						
Rogerville silt loam----	80	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Clay > 40% Hard to recl Rock fragmer
892:						
Rogerville silt loam----	85	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Clay > 40% Hard to recl Rock fragmer
893:						
Rogerville silt loam----	85	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Clay > 40% Hard to recl Rock fragmer

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
902:						
Lava flows, Lovejoy basalt	50	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam	40	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bed
				Content of organic matter	0.00	Rock fragmen
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	pH from 4.5
903:						
Mudwash gravelly medial sandy loam	45	Fair source		Poor source		Poor source
		Thickest layer a possible source	0.30	Bottom layer not a source	0.00	Hard to recl
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.88			pH from 4.5
Timberisland very gravelly medial sandy loam	25	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Hard to recl
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
				Content of organic matter	0.00	Slope > 15%
		Organic matter content	0.00			
Lavatop gravelly medial fine sandy loam	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Content of organic matter	0.00	Depth to bed
				Bottom layer not a source	0.00	pH > 6.5
		Organic matter content	0.00			
904:						
Lava flows, Lovejoy basalt	60	Not rated		Not rated		Not rated
Lavatop gravelly medial fine sandy loam	20	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Content of organic matter	0.00	Rock fragmen
				Bottom layer not a source	0.00	Depth to bed
		Organic matter content	0.00			pH > 6.5

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
905:						
Lava flows, Lovejoy basalt	60	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam	30	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope > 15%
				Content of organic matter	0.00	Depth to bed
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
						pH from 4.5
906:						
Lava flows, Lovejoy basalt	60	Not rated		Not rated		Not rated
Lumpkin gravelly medial sandy loam	30	Poor source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope > 15%
				Content of organic matter	0.00	Depth to bed
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
						pH from 4.5
911:						
Endoaquolls loam	75	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Saturation <
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%
923:						
Powderhouse medial sandy loam	45	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Content of organic matter	0.00	Rock fragmen
				Thickest layer not a source	0.00	Depth to bed
		Organic matter content	0.00	Bottom layer a possible source	0.06	pH from 4.5
		Bottom layer a possible source	0.25			
McNair medial coarse sandy loam	25	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.03	Hard to recl
						OM = 15-30%
		Bottom layer a possible source	0.50	Bottom layer a possible source	0.06	Rock fragmen

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
923:						
Greenwell medial sandy loam	20	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
				Content of organic matter	0.00	Depth to bed
		Organic matter content	0.00	Bottom layer a possible source	0.04	
		Bottom layer not a source	0.00			
924:						
Powderhouse medial sandy loam	45	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Content of organic matter	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Organic matter content	0.00	Bottom layer a possible source	0.06	Depth to bed
		Bottom layer a possible source	0.25			pH from 4.5
McNair medial coarse sandy loam	25	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.03	Slope > 15%
						Hard to recl
		Bottom layer a possible source	0.50	Bottom layer a possible source	0.06	OM = 15-30%
						Rock fragmen
Greenwell medial sandy loam	20	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope > 15%
				Content of organic matter	0.00	Rock fragmen
		Organic matter content	0.00	Bottom layer a possible source	0.04	Depth to bed
		Bottom layer not a source	0.00			
925:						
Powderhouse medial sandy loam	45	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Content of organic matter	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Organic matter content	0.00	Bottom layer a possible source	0.06	Depth to bed
		Bottom layer a possible source	0.25			pH from 4.5

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
925:						
McNair medial coarse sandy loam----------	25	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.03	Slope > 15%
		Bottom layer a possible source	0.50	Bottom layer a possible source	0.06	Hard to recl
						OM = 15-30%
						Rock fragmen
Greenwell medial sandy loam----------	20	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope > 15%
				Content of organic matter	0.00	Rock fragmen
		Organic matter content	0.00	Bottom layer a possible source	0.04	Depth to bed
		Bottom layer not a source	0.00			
930:						
Shakeridge gravelly medial coarse sandy loam----------	50	Fair source		Fair source		Poor source
		Thickest layer a possible source	0.25	Bottom layer a possible source	0.05	Hard to recl
						Rock fragmen
		Bottom layer a possible source	0.50	Thickest layer a possible source	0.05	
Timberisland very gravelly medial sandy loam----------	40	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Hard to recl
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
				Content of organic matter	0.00	
		Organic matter content	0.00			
931:						
Shakeridge gravelly medial coarse sandy loam----------	40	Fair source		Fair source		Poor source
		Thickest layer a possible source	0.25	Bottom layer a possible source	0.05	Slope > 15%
						Hard to recl
		Bottom layer a possible source	0.50	Thickest layer a possible source	0.05	Rock fragmen

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
931:						
Mudwash gravelly medial sandy loam----------	25	Fair source		Poor source		Poor source
		Thickest layer a possible source	0.30	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Hard to recl
		Bottom layer a possible source	0.88			Rock fragmen
						pH from 4.5
Timberisland very gravelly medial sandy loam----------	15	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
				Content of organic matter	0.00	Rock fragmen
		Organic matter content	0.00			
932:						
Shakeridge gravelly medial coarse sandy loam----------	50	Fair source		Fair source		Poor source
		Thickest layer a possible source	0.25	Bottom layer a possible source	0.05	Slope > 15%
						Hard to recl
		Bottom layer a possible source	0.50	Thickest layer a possible source	0.05	Rock fragmen
Mudwash gravelly medial sandy loam----------	35	Fair source		Poor source		Poor source
		Thickest layer a possible source	0.30	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Hard to recl
		Bottom layer a possible source	0.88			Rock fragmen
						pH from 4.5
933:						
Shakeridge gravelly medial coarse sandy loam----------	80	Fair source		Fair source		Poor source
		Thickest layer a possible source	0.25	Bottom layer a possible source	0.05	Slope > 15%
						Hard to recl
		Bottom layer a possible source	0.50	Thickest layer a possible source	0.05	Rock fragmen

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
934:						
Mudwash gravelly medial sandy loam----------	80	Fair source		Poor source		Poor source
		Thickest layer a possible source	0.30	Bottom layer not a source	0.00	Hard to recl
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.88			pH from 4.5
939:						
Fluvaquentic Humaquepts very fine sandy loam---	85	Poor source		Poor source		Fair source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Saturation f
				Thickest layer not a source	0.00	Hard to recl
		Bottom layer not a source	0.00			
940:						
Dejonah gravelly loam---	50	Poor source		Fair source		Good source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	
				Thickest layer a possible source	0.04	
		Bottom layer not a source	0.00			
Stagpoint loam----------	30	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragmen
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
						pH from 4.5
941:						
Dejonah gravelly loam---	50	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer a possible source	0.04	
		Bottom layer not a source	0.00			
Stagpoint loam----------	30	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmen
						Hard to recl
						pH from 4.5

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
942:						
Stagpoint loam----------	50	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmer Hard to recl pH from 4.5
Dejonah gravelly loam---	30	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer a possible source	0.04	
948:						
Stagpoint loam----------	55	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragmer Hard to recl pH from 4.5
Dejonah gravelly loam---	35	Poor source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
		Bottom layer not a source	0.00	Thickest layer a possible source	0.04	
949:						
Rogerville taxadjunct fine sandy loam--------	80	Poor source		Fair source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer a possible source	0.04	Rock fragmer Hard to recl
950:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam--------	40	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Rock fragmer
		Bottom layer a possible source	0.25	Thickest layer not a source	0.00	Depth to bed
				Content of organic matter	0.00	
Rock outcrop, olivine basalt, andesite, or mudflow----------	25	Not rated		Not rated		Not rated

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
950:						
Powderhouse medial sandy loam----------	20	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Content of organic matter	0.00	Rock fragmen
				Thickest layer not a source	0.00	Depth to bed
		Organic matter content	0.00	Bottom layer a possible source	0.06	pH from 4.5
		Bottom layer a possible source	0.25			
951:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam--------	40	Fair source		Poor source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer not a source	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Bottom layer a possible source	0.25	Content of organic matter	0.00	Depth to bed
Rock outcrop, andesite--	25	Not rated		Not rated		Not rated
Powderhouse medial sandy loam----------	20	Fair source		Fair source		Poor source
		Thickest layer not a source due to fines or thin layer	0.00	Content of organic matter	0.00	Slope > 15%
				Thickest layer not a source	0.00	Rock fragmen
		Organic matter content	0.00	Bottom layer a possible source	0.06	Depth to bed
		Bottom layer a possible source	0.25			pH from 4.5
960:						
Surnuf gravelly loam, high elevation---------	85	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
						Rock fragmen
961:						
Surnuf gravelly loam, high elevation---------	85	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to recl
						Slope 8 to 1
						Rock fragmen

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
962:						
Surnuf gravelly loam, high elevation---------	85	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40% Hard to recl Rock fragmer
963:						
Surnuf gravelly loam, high elevation---------	85	Poor source		Poor source		Poor source
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40% Hard to recl Rock fragmer
990:						
Riverwash, frequently flooded----------	100	Not rated		Not rated		Not rated
991:						
Xerofluvents sandy loam, frequently flooded----------	75	Poor source		Fair source		Fair source
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer a possible source	0.02	Saturation f
		Bottom layer not a source	0.00	Thickest layer a possible source	0.08	
995:						
Pits, gravel----------	100	Not rated		Not rated		Not rated
996:						
Dumps, excavated material----------	100	Not rated		Not rated		Not rated
997:						
Pits----------	95	Not rated		Not rated		Not rated
998:						
Dumps, landfill---------	100	Not rated		Not rated		Not rated

Table 18a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand		Potenti of
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating limiting
999:						
Water	100	Not rated		Not rated		Not rated
DAM:						
Dam, manmade	100	Not rated		Not rated		Not rated

The interpretation for gravel evaluates the content of rock fragments more than .2 inch in size in the bottom or t soil.

The interpretation for sand evaluates the amount of sand and fine gravel in the thickest or bottom layer of the so layers with the Unified engineering class for peat (PT) also are evaluated.

The interpretation for topsoil evaluates the following soil properties at various depths: calcium carbonates, clay density, sand content, soil wetness, rock fragments .2 inch to more than 3 inches in size, content of organic matter (O expressed as the sodium adsorption ratio (SAR), salinity expressed as dS/m of electrical conductivity (EC), depth to be

Table 18b.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for
The numbers in the value columns range from 0.00 to 0.99. The closer the value is to 0.00, the grea
value of 0.00 indicates an absolute limitation based on the soil property criteria used to develop
Values closer to 1.00 indicate lesser limitations. Features with a value of 1.00 have absolutely no
not shown in the table. Rating classes are determined by the most limiting value. Fine-earth fracti
are reported on a weight basis. An explanation of the rating criteria and of the abbreviations used
limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
100:				
Anita clay	60	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"
		Depth to pan < 20"	0.00	LEP > 9
		OM .5 to 1%	0.95	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.97	
Galt clay	25	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		OM < .5%	0.00	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.71	LEP > 9
		Depth to pan 20 to 40"	0.71	AASHTO GIN > 8 (lo
104:				
Bosquejo clay	85	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		Clay > 40%	0.00	LEP 3 to 9
		K factor .10 -.35	0.90	
105:				
Busacca clay loam	85	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.18	LEP 3 to 9
		K factor < .10	0.99	
108:				
Tuscan gravelly loam	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		OM < .5%	0.00	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
108:				
Igo gravelly loam	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
		Clay 27 to 40%	0.68	
Anita clay	15	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"
		Depth to pan < 20"	0.00	LEP > 9
		OM .5 to 1%	0.95	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.97	
109:				
Bosquejo clay loam	85	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
				LEP 3 to 9
110:				
Bosquejo silt loam, overwash, occasionally flooded	90	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.97	LEP 3 to 9
111yu:				
Auburn loam	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
Sobrante loam	40	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		AWC 3 - 6" to 60" depth	0.41	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.95	AASHTO GIN 5 to 8
114yu:				
Auburn gravelly loam	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
Sobrante gravelly loam	40	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		AWC 3 - 6" to 60" depth	0.55	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.95	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
118:				
Xerorthents, tailings	80	Poor source		Good source
		OM < .5%	0.00	
		Sand fractions 75 to 85%	0.03	
		pH between 4 and 6.5 above 40"	0.68	
		AWC 3 - 6" to 60" depth	0.84	
118co:				
Clear Lake clay, frequently flooded	90	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		SAR from 4 to 13	0.90	LEP > 9
		pH between 4 and 6.5 above 40"	0.96	
119:				
Xerorthents, tailings	70	Poor source		Good source
		OM < .5%	0.00	
		Sand fractions 75 to 85%	0.03	
		pH between 4 and 6.5 above 40"	0.68	
		AWC 3 - 6" to 60" depth	0.84	
Urban land	30	Not rated		Not rated
119yu:				
Auburn gravelly loam	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
				Slopes > 25%
Sobrante gravelly loam	30	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		AWC 3 - 6" to 60" depth	0.55	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.95	LEP 3 to 9
Rock outcrop	20	Not rated		Not rated
120:				
Gridley taxadjunct clay loam	80	Poor source		Poor source
		OM < .5%	0.00	Depth to pan < 40"
		Depth to pan 20 to 40"	0.01	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.22	Saturation from 1
		Clay 27 to 40%	0.32	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
121:				
Boga loam	45	Fair source		Poor source
		OM .5 to 1%	0.32	AASHTO GIN > 8 (lo
		K factor .10 -.35	0.90	LEP 3 to 9
				No saturated zone
Loemstone loam	40	Poor source		Fair source
		OM < .5%	0.00	LEP 3 to 9
		K factor .10 -.35	0.90	No saturated zone
		pH between 4 and 6.5 above 40"	0.95	
121su:				
Columbia fine sandy loam, frequently flooded	80	Fair source		Good source
		OM .5 to 1%	0.50	
125:				
Gridley taxadjunct loam	65	Fair source		Poor source
		Depth to pan 20 to 40"	0.03	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.22	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.50	Saturation from 1
				LEP 3 to 9
Calcic Haploxerolls sandy loam	20	Fair source		Fair source
		SAR from 4 to 13	0.22	Saturation from 1
		AWC 3 - 6" to 60" depth	0.97	
126:				
Liveoak sandy loam	85	Fair source		Fair source
		OM .5 to 1%	0.68	Saturation from 1
127:				
Gridley taxadjunct loam	85	Fair source		Poor source
		Depth to pan 20 to 40"	0.03	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.22	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.50	Saturation from 1
				LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
130:				
Eastbiggs loam	80	Poor source		Poor source
		Clay > 40%	0.00	Depth to pan < 40"
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		Depth to pan 20 to 40"	0.29	Saturation from 1
		AWC 3 - 6" to 60" depth	0.54	LEP 3 to 9
		K factor .10 -.35	0.90	
133:				
Eastbiggs loam	50	Poor source		Poor source
		Clay > 40%	0.00	Depth to pan < 40"
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		Depth to pan 20 to 40"	0.29	Saturation from 1
		AWC 3 - 6" to 60" depth	0.54	LEP 3 to 9
		K factor .10 -.35	0.90	
Galt clay loam	40	Fair source		Poor source
		Clay 27 to 40%	0.08	Saturation < 1' de
		Depth to pan 20 to 40"	0.54	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.89	AASHTO GIN > 8 (lo
		K factor < .10	0.99	LEP 3 to 9
136:				
Duric Xerarents, cut	35	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		OM < .5%	0.00	Depth to pan < 40"
		Depth to pan < 20"	0.00	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.50	LEP > 9
		pH between 4 and 6.5 above 40"	0.92	
		K factor < .10	0.99	
Duric Xerarents, fill	30	Poor source		Fair source
		OM < .5%	0.00	Depth to pan 40-60
		pH between 4 and 6.5 above 40"	0.99	LEP 3 to 9
		K factor < .10	0.99	
Eastbiggs fine sandy loam, leveled	25	Poor source		Poor source
		OM < .5%	0.00	Depth to pan < 40"
		Depth to pan 20 to 40"	0.54	Saturation from 1
		AWC 3 - 6" to 60" depth	0.78	LEP 3 to 9
		K factor .10 -.35	0.90	
		pH between 4 and 6.5 above 40"	0.92	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
138su:				
Liveoak sandy clay loam----------	85	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.97	Saturation from 1
139su:				
Liveoak taxadjunct loam, frequently flooded----------	45	Fair source		Fair source
		OM .5 to 1%	0.50	Depth to pan 40-60
		K factor < .10	0.99	
Galt taxadjunct clay loam, frequently flooded----------	40	Fair source		Poor source
		Depth to pan 20 to 40"	0.01	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.23	AASHTO GIN > 8 (lo
		OM .5 to 1%	0.50	Saturation from 1
		Clay 27 to 40%	0.98	LEP 3 to 9
143su:				
Marcum clay loam----------	45	Fair source		Poor source
		Clay 27 to 40%	0.98	AASHTO GIN > 8 (lo
		K factor < .10	0.99	Depth to bedrock 4
				LEP 3 to 9
Gridley clay loam----------	40	Fair source		Poor source
		Clay 27 to 40%	0.98	Depth to bedrock <
				AASHTO GIN > 8 (lo
				LEP 3 to 9
149yu:				
Flanly sandy loam----------	80	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.84	AASHTO GIN 5 to 8
		AWC 3 - 6" to 60" depth	0.99	LEP 3 to 9
150:				
Columbia stratified sand to fine sandy loam----------	85	Fair source		Good source
		K factor .10 -.35	0.68	
150su:				
Olashes sandy loam----------	85	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.97	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
151yu:				
Flanly sandy loam----------	80	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.84	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.99	AASHTO GIN 5 to 8
				LEP 3 to 9
152:				
Gianella fine sandy loam, frequently flooded----------	85	Fair source		Good source
		OM .5 to 1%	0.01	
		K factor .10 -.35	0.37	
153:				
Gianella sandy loam, frequently flooded----------	85	Fair source		Good source
		OM .5 to 1%	0.08	
		K factor .10 -.35	0.90	
154:				
Gianella silt loam, frequently flooded----------	85	Fair source		Good source
		OM .5 to 1%	0.00	
		K factor .10 -.35	0.90	
158:				
Gianella fine sandy loam, occasionally flooded----------	85	Fair source		Good source
		pH between 4 and 6.5 above 40"	0.92	
160:				
Gianella loam, occasionally flooded----------	85	Good source		Good source
161:				
Gianella fine sandy loam, rarely flooded----------	90	Fair source		Good source
		pH between 4 and 6.5 above 40"	0.92	
162:				
Gianella loam, rarely flooded-----	90	Good source		Good source

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
163yu:				
Holillipah loamy sand----------	85	Poor source		Good source
		WEG = 1 or 2	0.00	
		OM < .5%	0.00	
		AWC 3 - 6" to 60" depth	0.90	
165yu:				
Holland loam----------	40	Poor source		Fair source
		OM < .5%	0.00	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.74	Slopes 15 to 25%
Hoda loam----------	25	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		Clay > 40%	0.00	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.50	Slopes 15 to 25%
Hotaw loam----------	20	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.84	LEP 3 to 9
		AWC 3 - 6" to 60" depth	0.92	Slopes 15 to 25%
173yu:				
Hotaw loam----------	45	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.84	Slopes 15 to 25%
		AWC 3 - 6" to 60" depth	0.92	LEP 3 to 9
Chawanakee gravelly sandy loam----	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.68	Slopes 15 to 25%
		OM .5 to 1%	0.68	
Holland loam----------	15	Poor source		Fair source
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.74	LEP 3 to 9
175:				
Farwell clay loam, rarely flooded	85	Good source		Poor source
				AASHTO GIN > 8 (lo
				LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
176:				
Farwell loam, occasionally flooded	85	Good source		Poor source AASHTO GIN > 8 (lo
176yu:				
Jocal loam	80	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.50	LEP 3 to 9
		Clay 27 to 40%	0.98	
177:				
Farwell silt loam, occasionally flooded	85	Fair source		Poor source
		K factor .10 -.35	0.68	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.92	LEP 3 to 9
178:				
Arbuckle gravelly loam	87	Poor source		Good source
		OM < .5%	0.00	
		K factor < .10	0.99	
179:				
Moda taxadjunct loam	65	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		OM < .5%	0.00	Depth to pan < 40"
		Depth to pan 20 to 40"	0.03	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.10	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.92	
		K factor < .10	0.99	
Arbuckle gravelly loam	20	Poor source		Good source
		OM < .5%	0.00	
		K factor < .10	0.99	
180:				
Dodgeland silty clay loam, occasionally flooded	85	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		OM .5 to 1%	0.08	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.92	LEP > 9
		K factor < .10	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
181:				
Dodgeland silty clay loam, frequently flooded	80	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		OM .5 to 1%	0.08	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.92	LEP > 9
		K factor < .10	0.99	
188yu:				
Mariposa taxadjunct gravelly loam	80	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.54	
189:				
Esquon silt loam, overwash	90	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		K factor .10 -.35	0.37	LEP 3 to 9
		OM .5 to 1%	0.92	Saturation from 1
189yu:				
Mariposa taxadjunct gravelly loam	80	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.54	
196yu:				
Mildred cobbly loam	80	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		Clay > 40%	0.00	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.02	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.95	LEP 3 to 9
		K factor < .10	0.99	
200:				
Parrott silt loam, occasionally flooded	85	Fair source		Fair source
		K factor .10 -.35	0.68	AASHTO GIN 5 to 8
201:				
Parrott silt loam, frequently flooded	85	Fair source		Fair source
		K factor .10 -.35	0.68	AASHTO GIN 5 to 8

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of rc
		Rating class and limiting features	Value	Rating cla limiting fe
203:				
Kusalslough silty clay loam, occasionally flooded	85	Fair source		Poor source
		Clay 27 to 40%	0.18	AASHTO GIN > 8 (lc
		K factor .10 -.35	0.68	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.74	
205:				
Parrott silt loam, frequently flooded	50	Fair source		Fair source
		K factor .10 -.35	0.68	AASHTO GIN 5 to 8
Vermet silt loam, frequently flooded	35	Fair source		Poor source
		K factor .10 -.35	0.68	Saturation < 1' de
		OM .5 to 1%	0.92	AASHTO GIN > 8 (lc
		Clay 27 to 40%	0.92	LEP 3 to 9
206:				
Islandbar sandy loam	60	Fair source		Good source
		pH between 4 and 6.5 above 40"	0.84	
Chawanakee gravelly sandy loam	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	
207:				
Islandbar sandy loam	60	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.84	Slopes 15 to 25%
Chawanakee gravelly sandy loam	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	
208:				
Islandbar sandy loam	60	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.84	Slopes > 25%

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of roa
		Rating class and limiting features	Value	Rating cla limiting fe
208:				
Chawanakee gravelly sandy loam----	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	
209:				
Islandbar sandy loam----------	60	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.84	Slopes > 25%
Chawanakee gravelly sandy loam----	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	
210:				
Featherfalls sandy loam----------	50	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.92	AASHTO GIN > 8 (lo
				LEP 3 to 9
Islandbar sandy loam----------	35	Fair source		Good source
		pH between 4 and 6.5 above 40"	0.84	
211:				
Featherfalls sandy loam----------	55	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.92	Slopes > 25%
				AASHTO GIN > 8 (lo
				LEP 3 to 9
Islandbar sandy loam----------	35	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.84	Slopes 15 to 25%
212:				
Featherfalls sandy loam----------	55	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.92	Slopes > 25%
				AASHTO GIN > 8 (lo
				LEP 3 to 9
Islandbar sandy loam----------	35	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.84	Slopes > 25%

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
213:				
Featherfalls sandy loam----------	45	Fair source pH between 4 and 6.5 above 40"	 0.92	Poor source Slopes > 25% AASHTO GIN > 8 (lo LEP 3 to 9
Islandbar sandy loam----------	35	Fair source pH between 4 and 6.5 above 40"	 0.84	Poor source Slopes > 25%
214:				
Crystalhill gravelly coarse sandy loam----------	35	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	 0.00 0.68 0.98	Good source
Oregongulch gravelly sandy loam---	20	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	 0.00 0.00 0.68 0.99	Poor source Depth to bedrock <
Craigsaddle coarse sandy loam-----	20	Poor source OM < .5% K factor .10 -.35 pH between 4 and 6.5 above 40"	 0.00 0.37 0.61	Good source
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
215:				
Crystalhill gravelly coarse sandy loam----------	35	Poor source OM < .5% pH between 4 and 6.5 above 40" AWC 3 - 6" to 60" depth	 0.00 0.68 0.98	Fair source Slopes 15 to 25%
Oregongulch gravelly sandy loam---	20	Poor source AWC < 3" to 60" depth OM < .5% pH between 4 and 6.5 above 40" K factor < .10	 0.00 0.00 0.68 0.99	Poor source Depth to bedrock < Slopes 15 to 25%

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
215:				
Craigsaddle coarse sandy loam-----	20	Poor source		Fair source
		OM < .5%	0.00	Slopes 15 to 25%
		K factor .10 -.35	0.37	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.61	
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
216:				
Crystalhill gravelly coarse sandy loam-----------------------------	35	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
		AWC 3 - 6" to 60" depth	0.98	
Oregongulch gravelly sandy loam---	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	
Craigsaddle coarse sandy loam-----	20	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		K factor .10 -.35	0.37	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.61	
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
217:				
Crystalhill gravelly coarse sandy loam-----------------------------	35	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
		AWC 3 - 6" to 60" depth	0.98	
Oregongulch gravelly sandy loam---	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
217:				
Craigsaddle coarse sandy loam-----	20	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		K factor .10 -.35	0.37	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.61	
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
218:				
Rock outcrop, quartz diorite------	60	Not rated		Not rated
Lithic Xerorthents gravelly sandy loam-----------------------------	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	
Chawanakee gravelly sandy loam----	15	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	
219:				
Rock outcrop, quartz diorite------	60	Not rated		Not rated
Lithic Xerorthents gravelly sandy loam-----------------------------	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
		K factor .10 -.35	0.90	
Chawanakee gravelly sandy loam----	15	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of roa
		Rating class and limiting features	Value	Rating cla limiting fe
220:				
Esquon clay, frequently flooded---	60	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		OM < .5%	0.00	LEP > 9
		pH between 4 and 6.5 above 40"	0.99	Saturation from 1
				Depth to pan 40-60
Clear Lake silty clay loam, overwash---	30	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		K factor .10 -.35	0.68	AASHTO GIN > 8 (lo
		OM .5 to 1%	0.92	LEP > 9
221yu:				
Sites loam---	85	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		Clay > 40%	0.00	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.54	
222yu:				
Sites loam---	85	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		Clay > 40%	0.00	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.54	
225yu:				
Sites gravelly loam, bedrock substratum---	80	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		Clay > 40%	0.00	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.54	Depth to bedrock 4
226yu:				
Sites gravelly loam, bedrock substratum---	80	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		Clay > 40%	0.00	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.54	Depth to bedrock 4

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
227yu:				
Sites gravelly loam, bedrock substratum	80	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		Clay > 40%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.54	LEP 3 to 9
				Depth to bedrock 4
242yu:				
Surnuf loam	80	Poor source		Good source
		AWC < 3" to 60" depth	0.00	
		pH between 4 and 6.5 above 40"	0.74	
243yu:				
Surnuf loam	80	Poor source		Fair source
		AWC < 3" to 60" depth	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.74	
244yu:				
Surnuf loam	80	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.74	
245:				
Surnuf loam	80	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.74	
248yu:				
Trainer loam	85	Poor source		Good source
		OM < .5%	0.00	
250:				
Llanoseco, occasionally flooded	90	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		Calcium carbonates > 40%	0.00	LEP 3 to 9
		OM .5 to 1%	0.32	
		K factor .10 -.35	0.90	
		pH between 4 and 6.5 above 40"	0.92	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
252:				
Whitecabin silty clay, occasionally flooded	60	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		Maximum pH > 8.5	0.00	LEP > 9
		OM .5 to 1%	0.68	Saturation from 1
		pH between 4 and 6.5 above 40"	0.88	Depth to pan 40-60
		K factor < .10	0.99	
Ordferry silty clay, occasionally flooded	25	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		OM < .5%	0.00	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.43	LEP > 9
		Depth to pan 20 to 40"	0.46	AASHTO GIN > 8 (lo
		K factor .10 -.35	0.90	
		pH between 4 and 6.5 above 40"	0.99	
252yu:				
Woodleaf gravelly loam	80	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		Clay > 40%	0.00	LEP 3 to 9
		AWC 3 - 6" to 60" depth	0.25	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.95	
		Fragments 3-10" < 25%	0.99	
253yu:				
Woodleaf gravelly loam	80	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		Clay > 40%	0.00	Slopes 15 to 25%
		AWC 3 - 6" to 60" depth	0.25	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.95	25 to 50% fragment
		Fragments 3-10" < 25%	0.99	
255:				
Whitecabin silty clay loam, occasionally flooded	60	Poor source		Poor source
		Clay > 40%	0.00	LEP > 9
		OM .5 to 1%	0.08	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.88	Depth to pan 40-60
		K factor < .10	0.99	Saturation from 1

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
255:				
Ordferry silty clay, occasionally flooded	30	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		OM < .5%	0.00	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.43	LEP > 9
		Depth to pan 20 to 40"	0.46	AASHTO GIN > 8 (lo
		K factor .10 -.35	0.90	
		pH between 4 and 6.5 above 40"	0.99	
256:				
Whitecabin silt loam, occasionally flooded	85	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		OM .5 to 1%	0.68	LEP > 9
		K factor .10 -.35	0.90	Saturation from 1
				Depth to pan 40-60
257:				
Llanoseco, frequently flooded	90	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		Calcium carbonates > 40%	0.00	LEP 3 to 9
		OM .5 to 1%	0.32	
		K factor .10 -.35	0.90	
		pH between 4 and 6.5 above 40"	0.92	
258:				
Codora, occasionally flooded	85	Fair source		Poor source
		Clay 27 to 40%	0.02	AASHTO GIN > 8 (lo
		OM .5 to 1%	0.32	LEP 3 to 9
		K factor .10 -.35	0.90	
260:				
Ordferry silty clay, occasionally flooded	90	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		OM < .5%	0.00	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.43	LEP > 9
		Depth to pan 20 to 40"	0.46	AASHTO GIN > 8 (lo
		K factor .10 -.35	0.90	
		pH between 4 and 6.5 above 40"	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
280:				
Columbia taxadjunct stratified very fine sandy loam	80	Fair source		Poor source
		OM .5 to 1%	0.08	Saturation < 1' de
		K factor .10 -.35	0.37	
290:				
Perkins gravelly loam	90	Fair source		Good source
		OM .5 to 1%	0.68	
300:				
Redsluff gravelly loam	80	Good source		Good source
301:				
Wafap gravelly loam	70	Poor source		Poor source
		Fragments 3-10" > 50%	0.00	Fragments >3" > 50
		AWC < 3" to 60" depth	0.00	AASHTO GIN > 8 (lo
		OM < .5%	0.00	Saturation from 1
		Clay 27 to 40%	0.02	Depth to pan 40-60
		5 to 15% fragments >10"	0.70	LEP 3 to 9
Hamslough clay	15	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"
		Depth to pan 20 to 40"	0.29	LEP > 9
302:				
Redtough loam	50	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
		OM .5 to 1%	0.92	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.97	
Redswale cobbly loam	35	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
		25 to 50% fragments 3-10"	0.50	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.99	AASHTO GIN 5 to 8

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
303:				
Munjar gravelly loam	60	Poor source		Poor source
		OM < .5%	0.00	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.00	Saturation from 1
		Clay 27 to 40%	0.18	LEP 3 to 9
		Depth to pan 20 to 40"	0.65	25 to 50% fragment
		Fragments 3-10" < 25%	0.99	
Tuscan taxadjunct gravelly clay loam	20	Poor source		Poor source
		OM < .5%	0.00	Saturation < 1' de
		Clay 27 to 40%	0.08	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.14	AASHTO GIN > 8 (lo
		Depth to pan 20 to 40"	0.46	LEP 3 to 9
Galt clay	10	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		OM < .5%	0.00	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.71	LEP > 9
		Depth to pan 20 to 40"	0.71	AASHTO GIN > 8 (lo
304:				
Redtough loam	80	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"
		Depth to pan < 20"	0.00	AASHTO GIN > 8 (lo
		OM .5 to 1%	0.92	
		pH between 4 and 6.5 above 40"	0.97	
305:				
Redtough gravelly loam	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
		OM .5 to 1%	0.32	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.92	
Redswale loam	25	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
		pH between 4 and 6.5 above 40"	0.92	
		K factor < .10	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
305:				
Anita, gravelly duripan	20	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"
		Depth to pan < 20"	0.00	LEP > 9
		OM .5 to 1%	0.68	AASHTO GIN > 8 (lo
306:				
Duric Xerarents, fill	50	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	Saturation < 1' de
		K factor .10 -.35	0.90	Depth to pan 40-60
		AWC > 6" to 60" depth	0.99	
Duric Xerarents, cut	40	Poor source		Poor source
		Depth to pan < 20"	0.00	Saturation < 1' de
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"
		pH between 4 and 6.5 above 40"	0.92	
307:				
Duric Xerarents clay loam, leveled	70	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		OM < .5%	0.00	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.92	
310:				
Kimball loam	85	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		AWC < 3" to 60" depth	0.00	
		K factor .10 -.35	0.90	
		pH between 4 and 6.5 above 40"	0.97	
317:				
Thompsonflat loam	75	Poor source		Fair source
		OM < .5%	0.00	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.92	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
318:				
Thompsonflat fine sandy loam------	50	Poor source		Good source
		OM < .5%	0.00	
		AWC 3 - 6" to 60" depth	0.54	
		pH between 4 and 6.5 above 40"	0.92	
Oroville gravelly fine sandy loam	40	Poor source		Poor source
		OM < .5%	0.00	Depth to pan < 40"
		AWC < 3" to 60" depth	0.00	Saturation from 1
		Depth to pan 20 to 40"	0.05	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.92	
320:				
Vistarobles sandy loam----------	50	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
		pH between 4 and 6.5 above 40"	0.92	AASHTO GIN > 8 (lo
				LEP 3 to 9
Redding loam----------	40	Poor source		Poor source
		OM < .5%	0.00	Depth to pan < 40"
		Depth to pan 20 to 40"	0.90	Saturation from 1
		AWC 3 - 6" to 60" depth	0.94	LEP 3 to 9
				AASHTO GIN 5 to 8
321:				
Durixeralfs, fine-loamy, gravelly fine sandy loam----------	50	Poor source		Poor source
		OM < .5%	0.00	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.00	Depth to bedrock 4
		Depth to pan 20 to 40"	0.29	Saturation from 1
		pH between 4 and 6.5 above 40"	0.92	LEP 3 to 9
Durixeralfs, loamy-skeletal, gravelly fine sandy loam---------	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
		pH between 4 and 6.5 above 40"	0.92	25 to 50% fragment
		25 to 50% fragments 3-10"	0.96	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
321:				
Typic Petraquepts silty clay------	15	Poor source		Poor source
		Clay > 40%	0.00	Depth to bedrock <
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
		OM < .5%	0.00	LEP > 9
				AASHTO GIN > 8 (lo
330:				
Wilsoncreek loam, occasionally flooded----------	60	Good source		Fair source
				AASHTO GIN 5 to 8
Trainer loam, occasionally flooded----------	25	Poor source		Good source
		OM < .5%	0.00	
		K factor .10 -.35	0.90	
331:				
Thompsonflat loam----------	85	Poor source		Fair source
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.92	LEP 3 to 9
335:				
Galt clay loam----------	85	Fair source		Poor source
		Clay 27 to 40%	0.08	Saturation < 1' de
		Depth to pan 20 to 40"	0.54	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.89	AASHTO GIN > 8 (lo
		K factor < .10	0.99	LEP 3 to 9
336:				
Galt clay----------	90	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		OM < .5%	0.00	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.71	LEP > 9
		Depth to pan 20 to 40"	0.71	AASHTO GIN > 8 (lo
337:				
Galt clay loam----------	85	Fair source		Poor source
		Clay 27 to 40%	0.08	Saturation < 1' de
		Depth to pan 20 to 40"	0.54	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.89	AASHTO GIN > 8 (lo
		K factor < .10	0.99	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
338:				
Oxyaquic Xerofluvents silt loam---	90	Poor source		Good source
		OM < .5%	0.00	
		K factor .10 -.35	0.37	
339:				
Oxyaquic Xerofluvents sandy loam, frequently flooded---	90	Poor source		Good source
		OM < .5%	0.00	
		Sand fractions 75 to 85%	0.50	
		K factor < .10	0.99	
340:				
Rock outcrop, Lovejoy basalt------	35	Not rated		Not rated
Thermalrocks very gravelly loam---	25	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	
Campbellhills gravelly loam-------	20	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.32	Saturation < 1' de
		Clay 27 to 40%	0.82	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.92	Depth to bedrock 4
341:				
Elsey loam------------------------	25	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	Depth to bedrock <
		AWC 3 - 6" to 60" depth	0.68	AASHTO GIN > 8 (lo
		25 to 50% fragments 3-10"	0.90	Saturation from 1
				25 to 50% fragment
Beatsonhollow gravelly loam-------	25	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	Saturation < 1' de
		25 to 50% fragments 3-10"	0.70	AASHTO GIN 5 to 8
				25 to 50% fragment
Campbellhills gravelly loam-------	20	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.32	Saturation < 1' de
		Clay 27 to 40%	0.82	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.92	Depth to bedrock 4
Rock outcrop, Lovejoy basalt------	20	Not rated		Not rated

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of roa
		Rating class and limiting features	Value	Rating cla limiting fe
342:				
Thermalrocks very gravelly loam---	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	Slopes 15 to 25%
Beatsonhollow taxadjunct fine sandy loam----------	35	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.92	Saturation < 1' dep
Rock outcrop, Lovejoy basalt------	15	Not rated		Not rated
343:				
Coalcanyon very cobbly loam-------	50	Poor source		Poor source
		Fragments 3-10" > 50%	0.00	AASHTO GIN > 8 (low
		AWC 3 - 6" to 60" depth	0.54	25 to 50% fragments
		pH between 4 and 6.5 above 40"	0.92	
Coonhollow gravelly loam----------	35	Poor source		Poor source
		Fragments 3-10" > 50%	0.00	Fragments >3" > 50%
		AWC 3 - 6" to 60" depth	0.01	AASHTO GIN > 8 (low
		pH between 4 and 6.5 above 40"	0.68	Depth to bedrock 4(
344:				
Coalcanyon very cobbly loam-------	45	Poor source		Poor source
		Fragments 3-10" > 50%	0.00	AASHTO GIN > 8 (low
		AWC 3 - 6" to 60" depth	0.54	25 to 50% fragments
		pH between 4 and 6.5 above 40"	0.92	Slopes 15 to 25%
Coonhollow gravelly loam----------	30	Poor source		Poor source
		Fragments 3-10" > 50%	0.00	Fragments >3" > 50%
		AWC 3 - 6" to 60" depth	0.01	AASHTO GIN > 8 (low
		pH between 4 and 6.5 above 40"	0.68	Depth to bedrock 4(
				Slopes 15 to 25%
Rock outcrop, Lovejoy basalt------	15	Not rated		Not rated
346:				
Cherotable loam-------------------	50	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (low
		pH between 4 and 6.5 above 40"	0.50	Depth to bedrock 4(
				LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
346:				
Elsey loam	35	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	Depth to bedrock <
		AWC 3 - 6" to 60" depth	0.68	AASHTO GIN > 8 (lo
		25 to 50% fragments 3-10"	0.90	Saturation from 1
				25 to 50% fragment
347:				
Haplic Palexeralfs loam	90	Poor source		Fair source
		More than 15% fragments >10"	0.00	LEP 3 to 9
		AWC 3 - 6" to 60" depth	0.68	
		pH between 4 and 6.5 above 40"	0.99	
353:				
Cherokeespring gravelly silt loam	80	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.92	LEP 3 to 9
355:				
Coalcanyon very cobbly loam	55	Poor source		Poor source
		Fragments 3-10" > 50%	0.00	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.54	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.92	Slopes 15 to 25%
Talus	35	Not rated		Not rated
356:				
Coalcanyon very cobbly loam	45	Poor source		Poor source
		Fragments 3-10" > 50%	0.00	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.54	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.92	25 to 50% fragment
Rock outcrop, basalt cliffs	20	Not rated		Not rated
Talus	20	Not rated		Not rated
Coonhollow gravelly loam	10	Poor source		Poor source
		Fragments 3-10" > 50%	0.00	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.01	Fragments >3" > 50
		pH between 4 and 6.5 above 40"	0.68	AASHTO GIN > 8 (lo
				Depth to bedrock 4

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
360:				
Typic Xerofluvents, coarse-loamy--	45	Poor source		Good source
		WEG = 1 or 2	0.00	
		OM < .5%	0.00	
		K factor .10 -.35	0.37	
Typic Xerofluvents, sandy-skeletal	40	Poor source		Good source
		Sand fractions > 85%	0.00	
		WEG = 1 or 2	0.00	
		OM < .5%	0.00	
		AWC < 3" to 60" depth	0.00	
361:				
Typic Xerofluvents, sandy-skeletal	85	Poor source		Good source
		Sand fractions > 85%	0.00	
		WEG = 1 or 2	0.00	
		OM < .5%	0.00	
		AWC < 3" to 60" depth	0.00	
362:				
Ultic Haploxeralfs, sandstone, low elevation, very deep----------	60	Poor source		Good source
		OM < .5%	0.00	
		pH between 4 and 6.5 above 40"	0.84	
		K factor < .10	0.99	
Ultic Haploxeralfs, sandstone, low elevation, deep----------	25	Poor source		Fair source
		OM < .5%	0.00	Depth to bedrock 4
		K factor .10 -.35	0.68	
		pH between 4 and 6.5 above 40"	0.99	
363:				
Ultic Haploxeralfs, sandstone, low elevation, very deep----------	60	Poor source		Good source
		OM < .5%	0.00	
		pH between 4 and 6.5 above 40"	0.84	
		K factor < .10	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
363:				
Ultic Haploxeralfs, sandstone, low elevation, deep	30	Poor source		Fair source
		OM < .5%	0.00	Depth to bedrock 4
		K factor .10 -.35	0.68	
		pH between 4 and 6.5 above 40"	0.99	
364:				
Ultic Haploxeralfs, sandstone, low elevation, deep	50	Poor source		Fair source
		OM < .5%	0.00	Depth to bedrock 4
		K factor .10 -.35	0.68	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.99	
Ultic Haploxeralfs, sandstone, low elevation, very deep	40	Poor source		Fair source
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.84	
		K factor < .10	0.99	
365:				
Palexerults gravelly loam	80	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.08	LEP 3 to 9
		OM .5 to 1%	0.68	Slopes 15 to 25%
		K factor < .10	0.99	
366:				
Palexerults gravelly loam	80	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.08	AASHTO GIN > 8 (lo
		OM .5 to 1%	0.68	LEP 3 to 9
		K factor < .10	0.99	
370:				
Palexerults gravelly loam	80	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.08	LEP 3 to 9
		OM .5 to 1%	0.68	
		K factor < .10	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
375:				
Wickscorner loam----------	80	Fair source		Fair source
		Clay 27 to 40%	0.32	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.84	
		OM .5 to 1%	0.92	
376:				
Flagcanyon gravelly loam----------	50	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"
		pH between 4 and 6.5 above 40"	0.39	Saturation from 1
		Depth to pan 20 to 40"	0.54	LEP 3 to 9
				25 to 50% fragment
Wickscorner loam----------	35	Fair source		Fair source
		Clay 27 to 40%	0.32	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.84	
		OM .5 to 1%	0.92	
377:				
Flagcanyon taxadjunct fine sandy loam----------	55	Poor source		Poor source
		OM < .5%	0.00	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.13	Saturation from 1
		Depth to pan 20 to 40"	0.65	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.92	
Durixeralfs, clayey-skeletal, loam	20	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"
		OM < .5%	0.00	LEP 3 to 9
		Depth to pan < 20"	0.00	
		pH between 4 and 6.5 above 40"	0.92	
		K factor < .10	0.99	
Duraquerts gravelly clay----------	15	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		OM < .5%	0.00	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.00	LEP > 9
		Depth to pan 20 to 40"	0.05	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
400:				
Subaco taxadjunct clay----------	85	Poor source		Poor source
		Clay > 40%	0.00	Depth to pan < 40"
		Maximum pH > 8.5	0.00	LEP > 9
		SAR from 4 to 13	0.78	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.90	Saturation from 1
		Depth to pan 20 to 40"	0.90	
		Calcium carbonates 15 to 40%	0.95	
		K factor < .10	0.99	
415:				
Ignord fine sandy loam----------	90	Good source		Good source
416:				
Calcic Haploxerolls sandy loam----	90	Fair source		Fair source
		SAR from 4 to 13	0.22	Saturation from 1
		AWC 3 - 6" to 60" depth	0.97	
418:				
Almendra loam----------	85	Fair source		Good source
		pH between 4 and 6.5 above 40"	0.84	
		K factor .10 -.35	0.90	
419:				
Conejo fine sandy loam, overwash--	85	Fair source		Poor source
		Clay 27 to 40%	0.92	AASHTO GIN > 8 (lo
		K factor < .10	0.99	LEP 3 to 9
420:				
Conejo clay loam----------	85	Fair source		Fair source
		Clay 27 to 40%	0.98	LEP 3 to 9
		K factor < .10	0.99	
425:				
Vina fine sandy loam----------	85	Good source		Good source
426:				
Vina loam----------	85	Good source		Good source

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
439:				
Oxyaquic Xerofluvents clay--------	85	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		K factor .10 -.35	0.37	LEP > 9
				Saturation from 1
440:				
Oxyaquic Xerofluvents silt loam, frequently flooded----------	80	Fair source		Fair source
		K factor .10 -.35	0.06	Saturation from 1
		pH between 4 and 6.5 above 40"	0.92	
441:				
Oxyaquic Xerofluvents very fine sandy loam----------	90	Fair source		Fair source
		K factor .10 -.35	0.06	Saturation from 1
		pH between 4 and 6.5 above 40"	0.92	
442:				
Durixerolls clay loam----------	55	Poor source		Poor source
		OM < .5%	0.00	Depth to pan < 40"
		Depth to pan 20 to 40"	0.80	AASHTO GIN > 8 (lo
		K factor .10 -.35	0.90	Saturation from 1
		Clay 27 to 40%	0.98	LEP 3 to 9
Haploxerolls clay loam----------	30	Good source		Poor source
				AASHTO GIN > 8 (lo
				Saturation from 1
				Depth to pan 40-60
443:				
Durixerolls loam----------	60	Fair source		Poor source
		OM .5 to 1%	0.08	Depth to pan < 40"
		Depth to pan 20 to 40"	0.21	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.53	Saturation from 1
		K factor .10 -.35	0.90	
Haploxerolls loam----------	25	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.92	AASHTO GIN > 8 (lo
		K factor < .10	0.99	Depth to pan 40-60
				Saturation from 1

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of re
		Rating class and limiting features	Value	Rating cla limiting fe
445:				
Chico loam	85	Fair source		Poor source
		K factor .10 -.35	0.90	AASHTO GIN > 8 (lo
				LEP 3 to 9
447:				
Charger fine sandy loam	80	Good source		Good source
448:				
Haploxerolls clay loam	75	Fair source		Poor source
		Clay 27 to 40%	0.82	AASHTO GIN > 8 (lo
		K factor .10 -.35	0.90	LEP 3 to 9
449:				
Haploxerolls loam	75	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.68	AASHTO GIN 5 to 8
		K factor .10 -.35	0.90	
500:				
Lofgren clay	45	Poor source		Poor source
		Clay > 40%	0.00	LEP > 9
		OM .5 to 1%	0.35	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.39	Saturation from 1
				Depth to pan 40-60
Blavo clay	40	Poor source		Poor source
		Clay > 40%	0.00	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.90	LEP > 9
		Depth to pan 20 to 40"	0.94	AASHTO GIN > 8 (lo
		K factor < .10	0.99	Saturation from 1
501:				
Lofgren clay, occasionally flooded	45	Poor source		Poor source
		Clay > 40%	0.00	LEP > 9
		OM .5 to 1%	0.32	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.92	Depth to pan 40-60
				Saturation from 1

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential
		Rating class and limiting features	Value	Rating cla limiting fe
501:				
Blavo clay, occasionally flooded--	40	Poor source		Poor source
		Clay > 40%	0.00	Depth to pan < 40"
		OM .5 to 1%	0.32	LEP > 9
		AWC 3 - 6" to 60" depth	0.91	AASHTO GIN > 8 (lo
		Depth to pan 20 to 40"	0.94	Saturation from 1
		K factor < .10	0.99	
502:				
Blavo silt loam, overwash, occasionally flooded----------	80	Poor source		Poor source
		Clay > 40%	0.00	Depth to pan < 40"
		OM .5 to 1%	0.32	LEP > 9
		K factor .10 -.35	0.68	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.93	Saturation from 1
		Depth to pan 20 to 40"	0.94	
519:				
Edjobe silty clay----------	85	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		K factor .10 -.35	0.68	LEP 3 to 9
		OM .5 to 1%	0.92	Saturation from 1
520:				
Esquon clay----------	60	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		OM < .5%	0.00	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.08	Saturation from 1
		K factor .10 -.35	0.90	Depth to pan 40-60
Neerdobe clay----------	30	Poor source		Poor source
		Clay > 40%	0.00	Depth to pan < 40"
		Maximum pH > 8.5	0.00	AASHTO GIN > 8 (lo
		K factor .10 -.35	0.37	LEP > 9
		OM .5 to 1%	0.84	Saturation from 1
		pH between 4 and 6.5 above 40"	0.84	
		Depth to pan > 40"	0.99	
		AWC 3 - 6" to 60" depth	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
521:				
Neerdobe silt loam, overwash------	85	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		K factor .10 -.35	0.68	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.92	Depth to pan 40-60
				Saturation from 1
522:				
Clear Lake silty clay loam, overwash-------------------------	80	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		OM .5 to 1%	0.92	AASHTO GIN > 8 (lo
		K factor < .10	0.99	LEP > 9
523:				
Esquon silty clay loam, overwash--	80	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		OM < .5%	0.00	LEP > 9
		K factor .10 -.35	0.90	AASHTO GIN > 8 (lo
				Depth to pan 40-60
525:				
Govstanford loam------------------	85	Poor source		Fair source
		OM < .5%	0.00	Saturation from 1
		K factor .10 -.35	0.37	
		AWC 3 - 6" to 60" depth	0.96	
526:				
Govstanford loam, occasionally flooded---------------------------	85	Poor source		Fair source
		OM < .5%	0.00	Saturation from 1
		K factor .10 -.35	0.37	
		AWC 3 - 6" to 60" depth	0.96	
528:				
Neerdobe clay loam----------------	90	Fair source		Poor source
		Depth to pan 20 to 40"	0.14	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.35	LEP > 9
		Clay 27 to 40%	0.50	AASHTO GIN > 8 (lo
				Saturation from 1

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
550:				
Dunstone loam, dry----------	60	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM .5 to 1%	0.08	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.50	
		K factor < .10	0.99	
Loafercreek silt loam, dry--------	20	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.63	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.80	
		K factor < .10	0.99	
551:				
Dunstone loam, dry----------	35	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM .5 to 1%	0.08	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.50	Slopes 15 to 25%
		K factor < .10	0.99	
Lomarica loam----------	15	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.01	Depth to bedrock <
		Clay 27 to 40%	0.02	Slopes > 25%
				LEP 3 to 9
Argonaut taxadjunct loam----------	15	Poor source		Poor source
		Clay > 40%	0.00	Depth to bedrock <
		AWC 3 - 6" to 60" depth	0.76	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.92	Slopes 15 to 25%
				LEP 3 to 9
552:				
Dunstone gravelly loam----------	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	
		pH between 4 and 6.5 above 40"	0.92	
Loafercreek gravelly loam---------	40	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.38	Depth to bedrock <
		OM .5 to 1%	0.68	
		pH between 4 and 6.5 above 40"	0.95	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
553:				
Dunstone gravelly loam----------	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.92	
Loafercreek gravelly loam---------	40	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.38	Depth to bedrock <
		OM .5 to 1%	0.68	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.95	
554:				
Dunstone gravelly loam----------	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.92	
Loafercreek gravelly loam---------	40	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.38	Depth to bedrock <
		OM .5 to 1%	0.68	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.95	
555:				
Dunstone gravelly loam----------	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.92	
Loafercreek gravelly loam---------	40	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.38	Depth to bedrock <
		OM .5 to 1%	0.68	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.95	
556:				
Mounthope loam----------	50	Poor source		Fair source
		OM < .5%	0.00	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.97	LEP 3 to 9
Hartsmill gravelly loam----------	40	Fair source		Poor source
		25 to 50% fragments 3-10"	0.17	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.74	LEP 3 to 9
		Clay 27 to 40%	0.82	25 to 50% fragment
		OM .5 to 1%	0.92	
		pH between 4 and 6.5 above 40"	0.97	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
557:				
Mounthope loam----------	50	Poor source		Fair source
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.97	Depth to bedrock 4
				LEP 3 to 9
Hartsmill gravelly loam----------	40	Fair source		Poor source
		25 to 50% fragments 3-10"	0.17	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.74	Slopes 15 to 25%
		Clay 27 to 40%	0.82	LEP 3 to 9
		OM .5 to 1%	0.92	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.97	
558:				
Hartsmill gravelly loam----------	55	Fair source		Poor source
		25 to 50% fragments 3-10"	0.17	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.74	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.82	LEP 3 to 9
		OM .5 to 1%	0.92	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.97	
Mounthope loam----------	30	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.97	Depth to bedrock 4
				LEP 3 to 9
559:				
Hartsmill gravelly loam----------	55	Fair source		Poor source
		25 to 50% fragments 3-10"	0.17	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.74	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.82	LEP 3 to 9
		OM .5 to 1%	0.92	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.97	
Mounthope loam----------	30	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.97	Depth to bedrock 4
				LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
560:				
Hartsmill gravelly loam----------	50	Fair source		Poor source
		25 to 50% fragments 3-10"	0.17	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.74	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.82	LEP 3 to 9
		OM .5 to 1%	0.92	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.97	
Mounthope loam----------	30	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.97	Depth to bedrock 4
				LEP 3 to 9
561:				
Bigridge loam----------	50	Poor source		Fair source
		OM < .5%	0.00	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.74	
		AWC 3 - 6" to 60" depth	0.78	
Minniecreek loam----------	35	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	Depth to bedrock <
		OM .5 to 1%	0.68	AASHTO GIN > 8 (lo
		K factor .10 -.35	0.90	LEP 3 to 9
		AWC 3 - 6" to 60" depth	0.99	
562:				
Bigridge loam----------	50	Poor source		Fair source
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.74	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.78	
Minniecreek loam----------	35	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	Depth to bedrock <
		OM .5 to 1%	0.68	AASHTO GIN > 8 (lo
		K factor .10 -.35	0.90	Slopes 15 to 25%
		AWC 3 - 6" to 60" depth	0.99	LEP 3 to 9
563:				
Bigridge loam----------	50	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.74	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.78	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
563:				
Minniecreek loam----------	35	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	Depth to bedrock <
		OM .5 to 1%	0.68	Slopes > 25%
		K factor .10 -.35	0.90	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.99	LEP 3 to 9
564:				
Bigridge loam----------	50	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.74	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.78	
Minniecreek loam----------	35	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	Depth to bedrock <
		OM .5 to 1%	0.68	Slopes > 25%
		K factor .10 -.35	0.90	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.99	LEP 3 to 9
565:				
Dunstone loam, dry----------	35	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM .5 to 1%	0.08	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.50	
		K factor < .10	0.99	
Argonaut taxadjunct loam----------	30	Poor source		Poor source
		Clay > 40%	0.00	Depth to bedrock <
		AWC 3 - 6" to 60" depth	0.76	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.92	LEP 3 to 9
Sunnyslope loam----------	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.99	
566:				
Dunstone loam, dry----------	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM .5 to 1%	0.08	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.50	
		K factor < .10	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of rc
		Rating class and limiting features	Value	Rating cla limiting fe
566:				
Loafercreek silt loam, dry--------	20	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.63	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.80	
		K factor < .10	0.99	
Katskillhill loam-----------------	15	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lc
		OM < .5%	0.00	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.50	LEP 3 to 9
567:				
Dunstone loam, dry----------------	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM .5 to 1%	0.08	AASHTO GIN > 8 (lc
		pH between 4 and 6.5 above 40"	0.50	
		K factor < .10	0.99	
Loafercreek silt loam, dry--------	25	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.63	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.80	
		K factor < .10	0.99	
Argonaut taxadjunct loam----------	20	Poor source		Poor source
		Clay > 40%	0.00	Depth to bedrock <
		AWC 3 - 6" to 60" depth	0.76	AASHTO GIN > 8 (lc
		pH between 4 and 6.5 above 40"	0.92	LEP 3 to 9
577:				
Parkshill coarse sandy loam-------	40	Poor source		Good source
		OM < .5%	0.00	
		pH between 4 and 6.5 above 40"	0.92	
Flanly loam-----------------------	25	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.05	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.68	
Hurleton gravelly sandy loam------	20	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		AWC < 3" to 60" depth	0.00	
		pH between 4 and 6.5 above 40"	0.80	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
578:				
Flanly loam----------	45	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.05	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.68	
Swedesflat cobbly fine sandy loam	35	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.95	
580:				
Surnuf taxadjunct loam----------	40	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		5 to 15% fragments >10"	0.37	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.68	
Griffgulch very gravelly silt loam	25	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		5 to 15% fragments >10"	0.00	LEP 3 to 9
		AWC 3 - 6" to 60" depth	0.47	25 to 50% fragment
		25 to 50% fragments 3-10"	0.82	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.88	
Rock outcrop, metavolcanic--------	20	Not rated		Not rated
581:				
Surnuf taxadjunct loam----------	65	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		5 to 15% fragments >10"	0.37	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.68	LEP 3 to 9
Griffgulch very gravelly silt loam	20	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		5 to 15% fragments >10"	0.00	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.47	LEP 3 to 9
		25 to 50% fragments 3-10"	0.82	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.88	Depth to bedrock 4
582:				
Surnuf taxadjunct loam----------	50	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		5 to 15% fragments >10"	0.37	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.68	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
582:				
Griffgulch very gravelly silt loam	35	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		5 to 15% fragments >10"	0.00	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.47	LEP 3 to 9
		25 to 50% fragments 3-10"	0.82	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.88	Depth to bedrock 4
583:				
Surnuf taxadjunct loam----------	50	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		5 to 15% fragments >10"	0.37	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.68	LEP 3 to 9
Griffgulch very gravelly silt loam	35	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		5 to 15% fragments >10"	0.00	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.47	LEP 3 to 9
		25 to 50% fragments 3-10"	0.82	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.88	Depth to bedrock 4
584:				
Flanly loam----------	35	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.05	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.68	Slopes 15 to 25%
Swedesflat cobbly fine sandy loam	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.95	Slopes 15 to 25%
Rackerby very gravelly sandy loam	25	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.99	Slopes 15 to 25%
585:				
Flanly loam----------	45	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.05	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.68	
Sommeyflat loam----------	35	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.97	AASHTO GIN 5 to 8
		K factor < .10	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
586:				
Sommeyflat loam	45	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.97	AASHTO GIN 5 to 8
		K factor < .10	0.99	Slopes 15 to 25%
Mounthope loam	40	Poor source		Fair source
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.97	Depth to bedrock 4
				LEP 3 to 9
587:				
Sommeyflat loam	35	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.97	Slopes > 25%
		K factor < .10	0.99	AASHTO GIN 5 to 8
Mounthope loam	30	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.97	Depth to bedrock 4
				LEP 3 to 9
Hurleton gravelly sandy loam	25	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		AWC < 3" to 60" depth	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.80	
588:				
Ultic Haploxeralfs, thermic, high terrace	95	Poor source		Fair source
		OM < .5%	0.00	Saturation from 1
		AWC < 3" to 60" depth	0.00	
		pH between 4 and 6.5 above 40"	0.68	
589:				
Ultic Haploxeralfs, thermic, high terrace	95	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		AWC < 3" to 60" depth	0.00	Saturation from 1
		pH between 4 and 6.5 above 40"	0.68	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
590:				
Vistarobles sandy loam----------	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
		pH between 4 and 6.5 above 40"	0.92	AASHTO GIN > 8 (lo
				LEP 3 to 9
Redding loam----------	25	Poor source		Poor source
		OM < .5%	0.00	Depth to pan < 40"
		Depth to pan 20 to 40"	0.90	Saturation from 1
		AWC 3 - 6" to 60" depth	0.94	LEP 3 to 9
				AASHTO GIN 5 to 8
Argonaut taxadjunct loam----------	20	Poor source		Poor source
		Clay > 40%	0.00	Depth to bedrock <
		AWC 3 - 6" to 60" depth	0.76	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.92	LEP 3 to 9
Haploxererts gravelly silty clay--	15	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		OM .5 to 1%	0.68	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.85	LEP > 9
		pH between 4 and 6.5 above 40"	0.97	Depth to bedrock 4
603:				
Oroville gravelly fine sandy loam	30	Poor source		Poor source
		OM < .5%	0.00	Depth to pan < 40"
		AWC < 3" to 60" depth	0.00	Saturation from 1
		Depth to pan 20 to 40"	0.05	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.92	
Thermalito sandy loam----------	25	Poor source		Poor source
		OM < .5%	0.00	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.11	Saturation from 1
		Depth to pan 20 to 40"	0.65	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.68	
Fernandez sandy loam----------	15	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.92	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
603:				
Thompsonflat fine sandy loam------	15	Poor source		Good source
		OM < .5%	0.00	
		AWC 3 - 6" to 60" depth	0.54	
		pH between 4 and 6.5 above 40"	0.92	
605:				
Duric Xerarents fine sandy loam, leveled---------------------------	75	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
		OM < .5%	0.00	
Oroville gravelly fine sandy loam	20	Poor source		Poor source
		OM < .5%	0.00	Depth to pan < 40"
		AWC < 3" to 60" depth	0.00	Saturation from 1
		Depth to pan 20 to 40"	0.05	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.92	
606:				
Redtough loam----------------------	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
		OM .5 to 1%	0.92	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.97	
Fallager loam----------------------	30	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"
		Depth to pan < 20"	0.00	AASHTO GIN > 8 (lo
Anita, gravelly duripan-----------	15	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"
		Depth to pan < 20"	0.00	LEP > 9
		OM .5 to 1%	0.68	AASHTO GIN > 8 (lo
609:				
Anita, gravelly duripan-----------	50	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"
		Depth to pan < 20"	0.00	LEP > 9
		OM .5 to 1%	0.68	AASHTO GIN > 8 (lo

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
609:				
Tuscan taxadjunct gravelly clay loam	40	Poor source		Poor source
		OM < .5%	0.00	Saturation < 1' de
		Clay 27 to 40%	0.08	Depth to pan < 40"
		AWC 3 - 6" to 60" depth	0.14	AASHTO GIN > 8 (lo
		Depth to pan 20 to 40"	0.46	LEP 3 to 9
614:				
Doemill gravelly loam	50	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM .5 to 1%	0.23	Saturation < 1' de
		pH between 4 and 6.5 above 40"	0.95	
Jokerst very cobbly loam	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		5 to 15% fragments >10"	0.25	Saturation < 1' de
		pH between 4 and 6.5 above 40"	0.96	
615:				
Doemill gravelly loam	50	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM .5 to 1%	0.23	Saturation < 1' de
		pH between 4 and 6.5 above 40"	0.95	
Jokerst very cobbly loam	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		5 to 15% fragments >10"	0.25	Saturation < 1' de
		pH between 4 and 6.5 above 40"	0.96	
616:				
Jokerst very cobbly loam	35	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		5 to 15% fragments >10"	0.25	Saturation < 1' de
		pH between 4 and 6.5 above 40"	0.96	
Doemill gravelly loam	35	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM .5 to 1%	0.23	Saturation from 1
		pH between 4 and 6.5 above 40"	0.95	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
616:				
Typic Haploxeralfs gravelly loam--	15	Poor source		Fair source
		OM < .5%	0.00	LEP 3 to 9
		AWC 3 - 6" to 60" depth	0.63	
		Clay 27 to 40%	0.92	
617:				
Doemill gravelly loam----------	35	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM .5 to 1%	0.23	Saturation from 1
		pH between 4 and 6.5 above 40"	0.95	Slopes 15 to 25%
Jokerst very cobbly loam----------	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		5 to 15% fragments >10"	0.25	Saturation < 1' de
		pH between 4 and 6.5 above 40"	0.96	Slopes 15 to 25%
Typic Haploxeralfs gravelly loam--	20	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.63	LEP 3 to 9
		Clay 27 to 40%	0.92	
619:				
Carhart taxadjunct clay----------	90	Poor source		Poor source
		Clay > 40%	0.00	Depth to bedrock <
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
				AASHTO GIN > 8 (lo
				LEP > 9
620:				
Doemill gravelly loam----------	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM .5 to 1%	0.23	Saturation < 1' de
		pH between 4 and 6.5 above 40"	0.95	
Jokerst very cobbly loam----------	25	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		5 to 15% fragments >10"	0.25	Saturation < 1' de
		pH between 4 and 6.5 above 40"	0.96	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
620:				
Ultic Haploxeralfs, thermic, gravelly loam	20	Poor source		Poor source
		More than 15% fragments >10"	0.00	Depth to bedrock <
		AWC 3 - 6" to 60" depth	0.00	AASHTO GIN > 8 (lo
		25 to 50% fragments 3-10"	0.46	25 to 50% fragment
		OM .5 to 1%	0.82	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.92	Saturation from 1
		Clay 27 to 40%	0.98	
621:				
Doemill gravelly loam	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM .5 to 1%	0.23	Saturation from 1
		pH between 4 and 6.5 above 40"	0.95	
Jokerst very cobbly loam	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		5 to 15% fragments >10"	0.25	Saturation < 1' de
		pH between 4 and 6.5 above 40"	0.96	
Ultic Haploxeralfs, thermic, gravelly loam	20	Poor source		Poor source
		More than 15% fragments >10"	0.00	Depth to bedrock <
		AWC 3 - 6" to 60" depth	0.00	AASHTO GIN > 8 (lo
		25 to 50% fragments 3-10"	0.46	25 to 50% fragment
		OM .5 to 1%	0.82	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.92	Saturation from 1
		Clay 27 to 40%	0.98	
622:				
Xerorthents, shallow	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.68	Slopes > 25%
				AASHTO GIN 5 to 8
Typic Haploxeralfs gravelly loam	30	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.63	Depth to bedrock 4
		Clay 27 to 40%	0.92	LEP 3 to 9
Rock outcrop, mudflow-breccia cliffs	15	Not rated		Not rated

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
623:				
Xerorthents, shallow----------	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.68	Slopes > 25%
				AASHTO GIN 5 to 8
Typic Haploxeralfs gravelly loam--	25	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.63	Depth to bedrock 4
		Clay 27 to 40%	0.92	LEP 3 to 9
Rock outcrop, mudflow-breccia cliffs----------	20	Not rated		Not rated
624:				
Ultic Haploxeralfs, mesic, gravelly loam----------	60	Poor source		Poor source
		More than 15% fragments >10"	0.00	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.17	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.95	LEP 3 to 9
		Clay 27 to 40%	0.98	25 to 50% fragment
		25 to 50% fragments 3-10"	0.98	
Rockstripe very gravelly loam-----	25	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.96	
625:				
Ultic Haploxeralfs, mesic, gravelly loam----------	50	Poor source		Poor source
		More than 15% fragments >10"	0.00	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.17	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.95	LEP 3 to 9
		Clay 27 to 40%	0.98	Slopes 15 to 25%
		25 to 50% fragments 3-10"	0.98	25 to 50% fragment
Rockstripe very gravelly loam-----	35	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.96	Slopes 15 to 25%

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
626:				
Ultic Haploxeralfs gravelly loam--	40	Fair source Clay 27 to 40%	 0.50	Poor source Slopes > 25% AASHTO GIN > 8 (lo LEP 3 to 9 Depth to bedrock 4
Rockstripe very gravelly loam-----	35	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	 0.00 0.96	Poor source Depth to bedrock < Slopes > 25%
Rock outcrop, mudflow-breccia cliffs----------	15	Not rated		Not rated
627:				
Ultic Haploxeralfs gravelly loam--	40	Fair source Clay 27 to 40%	 0.50	Poor source Slopes > 25% AASHTO GIN > 8 (lo LEP 3 to 9 Depth to bedrock 4
Rockstripe very gravelly loam-----	35	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	 0.00 0.96	Poor source Depth to bedrock < Slopes > 25%
Rock outcrop, mudflow-breccia cliffs----------	15	Not rated		Not rated
628:				
Rockstripe very gravelly loam-----	40	Poor source AWC < 3" to 60" depth pH between 4 and 6.5 above 40"	 0.00 0.96	Poor source Depth to bedrock < Slopes > 25%
Ultic Haploxeralfs gravelly loam--	35	Fair source Clay 27 to 40%	 0.50	Poor source Slopes > 25% AASHTO GIN > 8 (lo LEP 3 to 9 Depth to bedrock 4
Rock outcrop, mudflow-breccia cliffs----------	20	Not rated		Not rated

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
629:				
Slideland gravelly loam----------	80	Fair source		Poor source
		OM .5 to 1%	0.08	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.32	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.99	
630:				
Slideland gravelly loam----------	80	Fair source		Poor source
		OM .5 to 1%	0.08	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.32	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.99	LEP 3 to 9
631:				
Slideland gravelly loam----------	80	Fair source		Poor source
		OM .5 to 1%	0.08	Slopes > 25%
		Clay 27 to 40%	0.32	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.99	LEP 3 to 9
632:				
Ultic Haploxeralfs, conglomerate, very deep----------	50	Fair source		Fair source
		Clay 27 to 40%	0.32	LEP 3 to 9
Ultic Haploxeralfs, conglomerate, moderately deep----------	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		25 to 50% fragments 3-10"	0.69	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.96	LEP 3 to 9
633:				
Ultic Haploxeralfs, conglomerate, very deep----------	60	Fair source		Fair source
		Clay 27 to 40%	0.32	Slopes 15 to 25%
				LEP 3 to 9
Ultic Haploxeralfs, conglomerate, moderately deep----------	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		25 to 50% fragments 3-10"	0.69	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.96	25 to 50% fragment
				LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
634:				
Ultic Haploxeralfs, conglomerate, very deep	60	Fair source		Poor source
		Clay 27 to 40%	0.32	Slopes > 25%
				LEP 3 to 9
Ultic Haploxeralfs, conglomerate, moderately deep	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		25 to 50% fragments 3-10"	0.69	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.96	25 to 50% fragment
				LEP 3 to 9
635:				
Ultic Haploxeralfs, conglomerate, very deep	50	Fair source		Poor source
		Clay 27 to 40%	0.32	Slopes > 25%
				LEP 3 to 9
Ultic Haploxeralfs, conglomerate, moderately deep	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		25 to 50% fragments 3-10"	0.69	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.96	25 to 50% fragment
				LEP 3 to 9
636:				
Ultic Haploxeralfs, conglomerate, moderately deep	50	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		25 to 50% fragments 3-10"	0.69	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.96	25 to 50% fragment
				LEP 3 to 9
Ultic Haploxeralfs, conglomerate, very deep	40	Fair source		Poor source
		Clay 27 to 40%	0.32	Slopes > 25%
				LEP 3 to 9
637:				
Ultic Haploxeralfs, sandstone	80	Poor source		Good source
		OM < .5%	0.00	
		AWC 3 - 6" to 60" depth	0.74	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
638:				
Ultic Haploxeralfs, sandstone-----	80	Poor source		Fair source
		OM < .5%	0.00	Slopes 15 to 25%
		AWC 3 - 6" to 60" depth	0.74	
639:				
Ultic Haploxeralfs, sandstone-----	75	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.74	
640:				
Ultic Haploxeralfs, sandstone-----	75	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.74	
641:				
Ultic Haploxeralfs, sandstone-----	75	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.74	
642:				
Chinacamp gravelly loam-----------	70	Poor source		Poor source
		More than 15% fragments >10"	0.00	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.68	LEP 3 to 9
643:				
Chinacamp gravelly loam-----------	70	Poor source		Poor source
		More than 15% fragments >10"	0.00	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.68	Slopes 15 to 25%
				LEP 3 to 9
644:				
Chinacamp gravelly loam-----------	70	Poor source		Poor source
		More than 15% fragments >10"	0.00	Slopes > 25%
		Clay 27 to 40%	0.68	AASHTO GIN > 8 (lo
				LEP 3 to 9
645:				
Chinacamp gravelly loam-----------	70	Poor source		Poor source
		More than 15% fragments >10"	0.00	Slopes > 25%
		Clay 27 to 40%	0.68	AASHTO GIN > 8 (lo
				LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
646:				
Coalcanyon taxadjunct very gravelly loam	80	Fair source		Fair source
		25 to 50% fragments 3-10"	0.68	LEP 3 to 9
		OM .5 to 1%	0.68	25 to 50% fragment
		Clay 27 to 40%	0.82	
647:				
Coalcanyon taxadjunct very gravelly loam	75	Fair source		Fair source
		25 to 50% fragments 3-10"	0.68	LEP 3 to 9
		OM .5 to 1%	0.68	25 to 50% fragment
		Clay 27 to 40%	0.82	
648:				
Coalcanyon taxadjunct very gravelly loam	80	Fair source		Poor source
		25 to 50% fragments 3-10"	0.68	Slopes > 25%
		OM .5 to 1%	0.68	LEP 3 to 9
		Clay 27 to 40%	0.82	25 to 50% fragment
649:				
Coalcanyon taxadjunct very gravelly loam	75	Fair source		Poor source
		25 to 50% fragments 3-10"	0.68	Slopes > 25%
		OM .5 to 1%	0.68	LEP 3 to 9
		Clay 27 to 40%	0.82	25 to 50% fragment
650:				
Schott very gravelly loam	65	Fair source		Fair source
		AWC 3 - 6" to 60" depth	0.03	Depth to bedrock 4
		5 to 15% fragments >10"	0.06	LEP 3 to 9
		25 to 50% fragments 3-10"	0.57	25 to 50% fragment
		Clay 27 to 40%	0.92	
		pH between 4 and 6.5 above 40"	0.97	
651:				
Schott very gravelly loam	65	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.03	Slopes > 25%
		5 to 15% fragments >10"	0.06	Depth to bedrock 4
		25 to 50% fragments 3-10"	0.57	LEP 3 to 9
		Clay 27 to 40%	0.92	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.97	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
652:				
Schott very gravelly loam---------	65	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.03	Slopes > 25%
		5 to 15% fragments >10"	0.06	Depth to bedrock 4
		25 to 50% fragments 3-10"	0.57	LEP 3 to 9
		Clay 27 to 40%	0.92	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.97	
Rock outcrop, mudflow breccia-----	20	Not rated		Not rated
654:				
Coridge bouldery loam-------------	70	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		5 to 15% fragments >10"	0.00	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.00	Saturation from 1
		Clay 27 to 40%	0.50	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.92	
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated
655:				
Coridge bouldery loam-------------	70	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		5 to 15% fragments >10"	0.00	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.00	LEP 3 to 9
		Clay 27 to 40%	0.50	Saturation from 1
		pH between 4 and 6.5 above 40"	0.92	
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated
656:				
Rock outcrop, basalt cliffs-------	40	Not rated		Not rated
Coalcanyon taxadjunct very gravelly loam---------------------	40	Fair source		Poor source
		25 to 50% fragments 3-10"	0.68	Slopes > 25%
		OM .5 to 1%	0.68	LEP 3 to 9
		Clay 27 to 40%	0.82	25 to 50% fragment
657:				
Bonneyridge sandy loam------------	35	Fair source		Good source
		pH between 4 and 6.5 above 40"	0.74	
		AWC 3 - 6" to 60" depth	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of re
		Rating class and limiting features	Value	Rating cla limiting fe
657:				
Chawanakee gravelly sandy loam----	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	
Rock outcrop, quartz diorite------	20	Not rated		Not rated
658:				
Bonneyridge sandy loam----------	35	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.74	Slopes 15 to 25%
		AWC 3 - 6" to 60" depth	0.99	
Chawanakee gravelly sandy loam----	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	
Rock outcrop, quartz diorite------	25	Not rated		Not rated
659:				
Bonneyridge sandy loam----------	35	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.74	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.99	
Chawanakee gravelly sandy loam----	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	
Rock outcrop, quartz diorite------	25	Not rated		Not rated
660:				
Bonneyridge sandy loam----------	30	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.74	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of roa
		Rating class and limiting features	Value	Rating cla limiting fe
660:				
Chawanakee gravelly sandy loam----	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	
Rock outcrop, quartz diorite------	30	Not rated		Not rated
661:				
Millerridge gravelly sandy clay loam----------	45	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.32	Depth to bedrock <
		Clay 27 to 40%	0.32	AASHTO GIN > 8 (lo
		5 to 15% fragments >10"	0.50	LEP 3 to 9
Boxrobber cobbly sandy clay loam--	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.50	LEP 3 to 9
		25 to 50% fragments 3-10"	0.98	
662:				
Millerridge gravelly sandy clay loam----------	45	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.32	Depth to bedrock <
		Clay 27 to 40%	0.32	AASHTO GIN > 8 (lo
		5 to 15% fragments >10"	0.50	LEP 3 to 9
Boxrobber cobbly sandy clay loam--	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.50	Slopes > 25%
		25 to 50% fragments 3-10"	0.98	LEP 3 to 9
663:				
Millerridge gravelly sandy clay loam----------	45	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.32	Depth to bedrock <
		Clay 27 to 40%	0.32	Slopes > 25%
		5 to 15% fragments >10"	0.50	AASHTO GIN > 8 (lo
				LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of roa
		Rating class and limiting features	Value	Rating cla limiting fe
663:				
Boxrobber cobbly sandy clay loam--	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.50	Slopes > 25%
		25 to 50% fragments 3-10"	0.98	LEP 3 to 9
664:				
Millerridge gravelly sandy clay loam----------	45	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.32	Depth to bedrock <
		Clay 27 to 40%	0.32	Slopes > 25%
		5 to 15% fragments >10"	0.50	AASHTO GIN > 8 (lo
				LEP 3 to 9
Boxrobber cobbly sandy clay loam--	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.50	Slopes > 25%
		25 to 50% fragments 3-10"	0.98	LEP 3 to 9
665:				
Surnuf gravelly loam----------	40	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.96	LEP 3 to 9
Bigridge loam----------	40	Poor source		Fair source
		OM < .5%	0.00	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.74	
		AWC 3 - 6" to 60" depth	0.78	
666:				
Surnuf gravelly loam----------	40	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.96	Slopes 15 to 25%
				LEP 3 to 9
Bigridge loam----------	40	Poor source		Fair source
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.74	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.78	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
667:				
Surnuf gravelly loam----------	40	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.96	AASHTO GIN > 8 (lo
				LEP 3 to 9
Bigridge loam----------	40	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.74	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.78	
668:				
Surnuf gravelly loam----------	40	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.96	AASHTO GIN > 8 (lo
				LEP 3 to 9
Bigridge loam----------	40	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.74	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.78	
669:				
Oroshore gravelly loam----------	35	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.28	Depth to bedrock <
		Clay 27 to 40%	0.82	AASHTO GIN > 8 (lo
		25 to 50% fragments 3-10"	0.97	LEP 3 to 9
				25 to 50% fragment
Mounthope loam----------	25	Poor source		Fair source
		OM < .5%	0.00	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.97	LEP 3 to 9
Dunstone gravelly loam----------	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	
		pH between 4 and 6.5 above 40"	0.92	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
670:				
Oroshore gravelly loam----------	35	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.28	Depth to bedrock <
		Clay 27 to 40%	0.82	AASHTO GIN > 8 (lo
		25 to 50% fragments 3-10"	0.97	LEP 3 to 9
				Slopes 15 to 25%
				25 to 50% fragment
Mounthope loam----------	25	Poor source		Fair source
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.97	Depth to bedrock 4
				LEP 3 to 9
Dunstone gravelly loam----------	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.92	
671:				
Oroshore gravelly loam----------	35	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.28	Depth to bedrock <
		Clay 27 to 40%	0.82	Slopes > 25%
		25 to 50% fragments 3-10"	0.97	AASHTO GIN > 8 (lo
				LEP 3 to 9
				25 to 50% fragment
Mounthope loam----------	25	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.97	Depth to bedrock 4
				LEP 3 to 9
Dunstone gravelly loam----------	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.92	
672:				
Oroshore gravelly loam----------	30	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.28	Depth to bedrock <
		Clay 27 to 40%	0.82	Slopes > 25%
		25 to 50% fragments 3-10"	0.97	AASHTO GIN > 8 (lo
				LEP 3 to 9
				25 to 50% fragment

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
672:				
Mounthope loam----------	25	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.97	Depth to bedrock 4
				LEP 3 to 9
Dunstone gravelly loam----------	25	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.92	
674:				
Chawanakee gravelly sandy loam----	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	
Bonneyridge sandy loam----------	30	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.74	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.99	
Rock outcrop, quartz diorite------	30	Not rated		Not rated
675:				
Clearhayes sandy clay loam--------	70	Poor source		Fair source
		OM < .5%	0.00	Saturation from 1
		AWC 3 - 6" to 60" depth	0.00	Depth to bedrock 4
		Sand fractions 75 to 85%	0.56	25 to 50% fragment
		25 to 50% fragments 3-10"	0.94	
Hamslough clay----------	15	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
		AWC < 3" to 60" depth	0.00	Depth to pan < 40'
		Depth to pan 20 to 40"	0.29	LEP > 9
676:				
Carhart clay----------	50	Poor source		Poor source
		Clay > 40%	0.00	Depth to bedrock <
		AWC 3 - 6" to 60" depth	0.54	LEP > 9
		OM .5 to 1%	0.68	AASHTO GIN > 8 (lo
				Saturation from 1

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
676:				
Anita taxadjunct clay----------	40	Poor source		Poor source
		Clay > 40%	0.00	Depth to bedrock <
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		OM .5 to 1%	0.68	LEP > 9
				AASHTO GIN > 8 (lo
677:				
Tuscan gravelly loam----------	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Depth to pan < 20"	0.00	Saturation < 1' de
		Clay > 40%	0.00	Depth to pan < 40"
		OM < .5%	0.00	AASHTO GIN > 8 (lo
				LEP 3 to 9
Fallager loam----------	25	Poor source		Poor source
		Clay > 40%	0.00	Depth to bedrock <
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
				AASHTO GIN > 8 (lo
Anita, gravelly duripan----------	15	Poor source		Poor source
		Clay > 40%	0.00	Depth to bedrock <
		AWC < 3" to 60" depth	0.00	Saturation < 1' de
		Depth to pan < 20"	0.00	Depth to pan < 40"
		OM .5 to 1%	0.68	LEP > 9
				AASHTO GIN > 8 (lo
679:				
Lucksev loam----------	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay > 40%	0.00	Saturation < 1' de
		OM < .5%	0.00	AASHTO GIN > 8 (lo
				LEP 3 to 9
Butteside gravelly loam----------	35	Poor source		Poor source
		Clay > 40%	0.00	Depth to bedrock <
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.33	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
679:				
Carhart clay----------	15	Poor source		Poor source
		Clay > 40%	0.00	Depth to bedrock <
		AWC 3 - 6" to 60" depth	0.54	LEP > 9
		OM .5 to 1%	0.68	AASHTO GIN > 8 (lo
				Saturation from 1
680:				
Lucksev loam----------	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay > 40%	0.00	Slopes > 25%
		OM < .5%	0.00	AASHTO GIN > 8 (lo
				LEP 3 to 9
Butteside gravelly loam----------	40	Poor source		Poor source
		Clay > 40%	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.33	AASHTO GIN > 8 (lo
				LEP 3 to 9
683:				
Typic Haploxeralfs, magnesic, low elevation----------	50	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.50	AASHTO GIN > 8 (lo
		Fragments 3-10" < 25%	0.99	LEP 3 to 9
				25 to 50% fragment
Earlal very gravelly loam---------	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.18	LEP 3 to 9
		25 to 50% fragments 3-10"	0.57	25 to 50% fragment
Rock outcrop, serpentinite--------	15	Not rated		Not rated
684:				
Typic Haploxeralfs, magnesic, low elevation----------	50	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.50	AASHTO GIN > 8 (lo
		Fragments 3-10" < 25%	0.99	Slopes 15 to 25%
				LEP 3 to 9
				25 to 50% fragment

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
684:				
Earlal very gravelly loam---------	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.18	LEP 3 to 9
		25 to 50% fragments 3-10"	0.57	Slopes 15 to 25%
				25 to 50% fragment
Rock outcrop, serpentinite--------	15	Not rated		Not rated
685:				
Bosquejo taxadjunct, gravelly substratum----------	70	Poor source		Poor source
		Clay > 40%	0.00	LEP > 9
		OM < .5%	0.00	Saturation from 1
		AWC 3 - 6" to 60" depth	0.99	
686:				
Redsluff taxadjunct clay loam-----	70	Fair source		Fair source
		Clay 27 to 40%	0.32	LEP 3 to 9
687:				
Xerorthents, shallow----------	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.68	AASHTO GIN 5 to 8
Typic Haploxeralfs gravelly loam--	40	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.63	LEP 3 to 9
		Clay 27 to 40%	0.92	
700:				
Retsongulch very gravelly sandy loam----------	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		5 to 15% fragments >10"	0.18	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.50	
		Fragments 3-10" < 25%	0.99	
Flumewall gravelly sandy loam-----	25	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		More than 15% fragments >10"	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of roa
		Rating class and limiting features	Value	Rating cla limiting fe
701:				
Powellton gravelly loam----------	40	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	AASHTO GIN 5 to 8
Obstruction gravelly sandy loam---	30	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	Slopes > 25%
702:				
Cerpone gravelly loam----------	50	Fair source		Fair source
		OM .5 to 1%	0.16	LEP 3 to 9
		Clay 27 to 40%	0.68	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.88	
Typic Haploxeralfs, magnesic, very gravelly loam----------	20	Poor source		Fair source
		Clay > 40%	0.00	LEP 3 to 9
		OM < .5%	0.00	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.44	
		25 to 50% fragments 3-10"	0.95	
Earlal very gravelly loam---------	15	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.18	LEP 3 to 9
		25 to 50% fragments 3-10"	0.57	25 to 50% fragment
703:				
Cerpone gravelly loam----------	30	Fair source		Fair source
		OM .5 to 1%	0.16	Slopes 15 to 25%
		Clay 27 to 40%	0.68	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.88	Depth to bedrock 4
Typic Haploxeralfs, magnesic, very gravelly loam----------	30	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		OM < .5%	0.00	LEP 3 to 9
		AWC 3 - 6" to 60" depth	0.44	Depth to bedrock 4
		25 to 50% fragments 3-10"	0.95	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of roa
		Rating class and limiting features	Value	Rating cla limiting fe
703:				
Earlal very gravelly loam---------	15	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.18	Slopes > 25%
		25 to 50% fragments 3-10"	0.57	LEP 3 to 9
				25 to 50% fragment
Rock outcrop, serpentinite--------	15	Not rated		Not rated
704:				
Typic Haploxeralfs, magnesic, very gravelly loam---------------------	40	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		OM < .5%	0.00	LEP 3 to 9
		AWC 3 - 6" to 60" depth	0.44	Depth to bedrock 4
		25 to 50% fragments 3-10"	0.95	
Earlal very gravelly loam---------	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.18	Slopes > 25%
		25 to 50% fragments 3-10"	0.57	LEP 3 to 9
				25 to 50% fragment
Cerpone gravelly loam----------	15	Fair source		Poor source
		OM .5 to 1%	0.16	Slopes > 25%
		Clay 27 to 40%	0.68	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.88	Depth to bedrock 4
Rock outcrop, serpentinite--------	15	Not rated		Not rated
705:				
Typic Haploxeralfs, magnesic, very gravelly loam---------------------	35	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		OM < .5%	0.00	LEP 3 to 9
		AWC 3 - 6" to 60" depth	0.44	Depth to bedrock 4
		25 to 50% fragments 3-10"	0.95	
Earlal very gravelly loam---------	25	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Clay 27 to 40%	0.18	Slopes > 25%
		25 to 50% fragments 3-10"	0.57	LEP 3 to 9
				25 to 50% fragment

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
705:				
Cerpone gravelly loam----------	15	Fair source		Poor source
		OM .5 to 1%	0.16	Slopes > 25%
		Clay 27 to 40%	0.68	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.88	Depth to bedrock 4
Rock outcrop, serpentinite--------	15	Not rated		Not rated
711:				
Dixmine very gravelly loam--------	45	Fair source		Fair source
		Clay 27 to 40%	0.50	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.61	Depth to bedrock 4
		25 to 50% fragments 3-10"	0.83	25 to 50% fragment
		AWC 3 - 6" to 60" depth	0.87	
Toadtown loam----------	40	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.54	LEP 3 to 9
		Clay 27 to 40%	0.98	
712:				
Dixmine very gravelly loam--------	50	Fair source		Fair source
		Clay 27 to 40%	0.50	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.61	LEP 3 to 9
		25 to 50% fragments 3-10"	0.83	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.87	25 to 50% fragment
Toadtown loam----------	40	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.54	Slopes 15 to 25%
		Clay 27 to 40%	0.98	LEP 3 to 9
713:				
Dixmine very gravelly loam--------	50	Fair source		Poor source
		Clay 27 to 40%	0.50	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.61	LEP 3 to 9
		25 to 50% fragments 3-10"	0.83	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.87	25 to 50% fragment
Toadtown loam----------	35	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.54	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.98	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
714:				
Dixmine very gravelly loam--------	50	Fair source		Poor source
		Clay 27 to 40%	0.50	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.61	LEP 3 to 9
		25 to 50% fragments 3-10"	0.83	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.87	25 to 50% fragment
Toadtown loam----------	35	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.54	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.98	LEP 3 to 9
715:				
Logtrain gravelly loam----------	40	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%
		5 to 15% fragments >10"	0.72	AASHTO GIN 5 to 8
		AWC 3 - 6" to 60" depth	0.81	Depth to bedrock 4
		Fragments 3-10" < 25%	0.99	
Bottlehill very gravelly loam-----	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%
		Clay 27 to 40%	0.98	LEP 3 to 9
Walkermine very gravelly loam-----	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.92	Slopes > 25%
		Fragments 3-10" < 25%	0.99	25 to 50% fragment
716:				
Griffgulch very gravelly silt loam	40	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		5 to 15% fragments >10"	0.00	LEP 3 to 9
		AWC 3 - 6" to 60" depth	0.47	25 to 50% fragment
		25 to 50% fragments 3-10"	0.82	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.88	
Surnuf gravelly loam----------	40	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.96	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential
		Rating class and limiting features	Value	Rating cla limiting fe
717:				
Griffgulch very gravelly silt loam	40	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		5 to 15% fragments >10"	0.00	Slopes 15 to 25%
		AWC 3 - 6" to 60" depth	0.47	LEP 3 to 9
		25 to 50% fragments 3-10"	0.82	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.88	Depth to bedrock 4
Surnuf gravelly loam----------	40	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.96	Slopes 15 to 25%
				LEP 3 to 9
718:				
Griffgulch very gravelly silt loam	35	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		5 to 15% fragments >10"	0.00	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.47	LEP 3 to 9
		25 to 50% fragments 3-10"	0.82	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.88	Depth to bedrock 4
Surnuf gravelly loam----------	35	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.96	AASHTO GIN > 8 (lo
				LEP 3 to 9
Spine taxadjunct very cobbly loam	15	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		25 to 50% fragments 3-10"	0.16	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.96	AASHTO GIN > 8 (lo
				25 to 50% fragment
				LEP 3 to 9
719:				
Griffgulch very gravelly silt loam	35	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		5 to 15% fragments >10"	0.00	AASHTO GIN > 8 (lo
		AWC 3 - 6" to 60" depth	0.47	LEP 3 to 9
		25 to 50% fragments 3-10"	0.82	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.88	Depth to bedrock 4

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
719:				
Surnuf gravelly loam----------	30	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.96	AASHTO GIN > 8 (lo
				LEP 3 to 9
Spine taxadjunct very cobbly loam	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		25 to 50% fragments 3-10"	0.16	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.96	AASHTO GIN > 8 (lo
				25 to 50% fragment
				LEP 3 to 9
720:				
Dystroxerepts extremely gravelly loam----------	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM .5 to 1%	0.32	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.50	25 to 50% fragment
		25 to 50% fragments 3-10"	0.52	LEP 3 to 9
		5 to 15% fragments >10"	0.92	
Haploxeralfs very gravelly loam---	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Slopes > 25%
		OM < .5%	0.00	Depth to bedrock 4
		5 to 15% fragments >10"	0.06	LEP 3 to 9
		25 to 50% fragments 3-10"	0.45	25 to 50% fragment
		Clay 27 to 40%	0.50	
		pH between 4 and 6.5 above 40"	0.95	
Rock outcrop, metavolcanic--------	15	Not rated		Not rated
721:				
Haploxerands, granitic till, medial sandy loam----------	70	Poor source		Good source
		More than 15% fragments >10"	0.00	
		AWC 3 - 6" to 60" depth	0.43	
		pH between 4 and 6.5 above 40"	0.84	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
722:				
Haploxerands, granitic till, medial sandy loam	70	Poor source		Fair source
		More than 15% fragments >10"	0.00	Slopes 15 to 25%
		AWC 3 - 6" to 60" depth	0.43	
		pH between 4 and 6.5 above 40"	0.84	
723:				
Haploxerands, granitic till, medial sandy loam	70	Poor source		Poor source
		More than 15% fragments >10"	0.00	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.43	
		pH between 4 and 6.5 above 40"	0.84	
724:				
Haploxerands, volcanic till, cobbly medial sandy loam	75	Fair source		Good source
		5 to 15% fragments >10"	0.60	
		pH between 4 and 6.5 above 40"	0.68	
725:				
Haploxerands, volcanic till, cobbly medial sandy loam	75	Fair source		Fair source
		5 to 15% fragments >10"	0.60	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.68	
726:				
Haploxerands, volcanic till, cobbly medial sandy loam	75	Fair source		Poor source
		5 to 15% fragments >10"	0.60	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	
727:				
Bonneyridge sandy loam	85	Fair source		Good source
		pH between 4 and 6.5 above 40"	0.74	
		AWC 3 - 6" to 60" depth	0.99	
728:				
Bonneyridge sandy loam	85	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.74	Slopes 15 to 25%
		AWC 3 - 6" to 60" depth	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
729:				
Bonneyridge sandy loam----------	85	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.74	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.99	
730:				
Tusccoll gravelly loam----------	60	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.99	Slopes > 25%
				AASHTO GIN > 8 (lo
				LEP 3 to 9
Schott very gravelly loam---------	25	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.03	Slopes > 25%
		5 to 15% fragments >10"	0.06	Depth to bedrock 4
		25 to 50% fragments 3-10"	0.57	LEP 3 to 9
		Clay 27 to 40%	0.92	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.97	
731:				
Tusccoll gravelly loam----------	50	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.99	Slopes > 25%
				AASHTO GIN > 8 (lo
				LEP 3 to 9
Schott very gravelly loam---------	35	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.03	Slopes > 25%
		5 to 15% fragments >10"	0.06	Depth to bedrock 4
		25 to 50% fragments 3-10"	0.57	LEP 3 to 9
		Clay 27 to 40%	0.92	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.97	
732:				
Bonepile taxadjunct, duripan substratum----------	90	Poor source		Fair source
		AWC < 3" to 60" depth	0.00	Depth to pan 40-60
		pH between 4 and 6.5 above 40"	0.92	25 to 50% fragment
		25 to 50% fragments 3-10"	0.95	
		Fragments >10" are < 5%	0.99	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
733:				
Haploxeralfs, terrace, gravelly loam	75	Poor source		Fair source
		More than 15% fragments >10"	0.00	AASHTO GIN 5 to 8
		OM < .5%	0.00	LEP 3 to 9
		AWC 3 - 6" to 60" depth	0.28	
		Clay 27 to 40%	0.68	
		25 to 50% fragments 3-10"	0.83	
734:				
Haploxerands medial sandy loam	55	Good source		Good source
Aquic Xerofluvents peaty very fine sandy loam	35	Poor source		Poor source
		WEG = 1 or 2	0.00	Saturation < 1' de
		K factor .10 -.35	0.90	
		pH between 4 and 6.5 above 40"	0.99	
735:				
Fluvaquents, loamy	80	Fair source		Poor source
		OM .5 to 1%	0.68	Saturation < 1' de
801:				
Obstruction gravelly sandy loam	70	Fair source		Good source
		pH between 4 and 6.5 above 40"	0.68	
802:				
Obskel very gravelly sandy loam	40	Fair source		Poor source
		OM .5 to 1%	0.01	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.75	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.92	
Obstruction gravelly sandy loam	40	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.68	Slopes 15 to 25%
803:				
Obskel very gravelly sandy loam	40	Fair source		Poor source
		OM .5 to 1%	0.01	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.75	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.92	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of rc
		Rating class and limiting features	Value	Rating cla limiting fe
803:				
Obstruction gravelly sandy loam---	40	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	Slopes > 25%
804:				
Obskel very gravelly sandy loam---	35	Fair source		Poor source
		OM .5 to 1%	0.01	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.75	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.92	
Obstruction gravelly sandy loam---	25	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	Slopes > 25%
Retsongulch very gravelly sandy loam----------	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		5 to 15% fragments >10"	0.18	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.50	
		Fragments 3-10" < 25%	0.99	
805:				
Bottlehill very gravelly loam-----	50	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	LEP 3 to 9
		Clay 27 to 40%	0.98	
Walkermine very gravelly loam-----	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.92	25 to 50% fragment
		Fragments 3-10" < 25%	0.99	
Logtrain gravelly loam----------	20	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.50	AASHTO GIN 5 to 8
		5 to 15% fragments >10"	0.72	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.81	
		Fragments 3-10" < 25%	0.99	
806:				
Bottlehill very gravelly loam-----	50	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	Slopes 15 to 25%
		Clay 27 to 40%	0.98	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
806:				
Walkermine very gravelly loam-----	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.92	Slopes > 25%
		Fragments 3-10" < 25%	0.99	25 to 50% fragment
Logtrain gravelly loam----------	20	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%
		5 to 15% fragments >10"	0.72	AASHTO GIN 5 to 8
		AWC 3 - 6" to 60" depth	0.81	Depth to bedrock 4
		Fragments 3-10" < 25%	0.99	
807:				
Bottlehill very gravelly loam-----	35	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%
		Clay 27 to 40%	0.98	LEP 3 to 9
Logtrain gravelly loam----------	30	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%
		5 to 15% fragments >10"	0.72	AASHTO GIN 5 to 8
		AWC 3 - 6" to 60" depth	0.81	Depth to bedrock 4
		Fragments 3-10" < 25%	0.99	
Walkermine very gravelly loam-----	25	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.92	Slopes > 25%
		Fragments 3-10" < 25%	0.99	25 to 50% fragment
808:				
Bottlehill very gravelly loam-----	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%
		Clay 27 to 40%	0.98	LEP 3 to 9
Walkermine very gravelly loam-----	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.92	Slopes > 25%
		Fragments 3-10" < 25%	0.99	25 to 50% fragment

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
808:				
Logtrain gravelly loam----------	20	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%
		5 to 15% fragments >10"	0.72	AASHTO GIN 5 to 8
		AWC 3 - 6" to 60" depth	0.81	Depth to bedrock 4
		Fragments 3-10" < 25%	0.99	
809:				
Walkermine very gravelly loam-----	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.92	Slopes > 25%
		Fragments 3-10" < 25%	0.99	25 to 50% fragment
Bottlehill very gravelly loam-----	15	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%
		Clay 27 to 40%	0.98	LEP 3 to 9
Logtrain gravelly loam----------	15	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%
		5 to 15% fragments >10"	0.72	AASHTO GIN 5 to 8
		AWC 3 - 6" to 60" depth	0.81	Depth to bedrock 4
		Fragments 3-10" < 25%	0.99	
Rock outcrop, metavolcanic--------	15	Not rated		Not rated
810:				
Dixmine very gravelly loam--------	35	Fair source		Poor source
		Clay 27 to 40%	0.50	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.61	LEP 3 to 9
		25 to 50% fragments 3-10"	0.83	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.87	25 to 50% fragment
Mac gravelly loam-----------------	25	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.59	LEP 3 to 9
Spine very gravelly loam----------	25	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.84	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of roa
		Rating class and limiting features	Value	Rating cla limiting fe
811:				
Powellton gravelly loam----------	50	Poor source		Fair source
		OM < .5%	0.00	AASHTO GIN 5 to 8
		pH between 4 and 6.5 above 40"	0.68	
Toadtown loam----------	40	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.54	LEP 3 to 9
		Clay 27 to 40%	0.98	
812:				
Powellton gravelly loam----------	50	Poor source		Fair source
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.68	AASHTO GIN 5 to 8
Toadtown loam----------	40	Poor source		Poor source
		OM < .5%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.54	Slopes 15 to 25%
		Clay 27 to 40%	0.98	LEP 3 to 9
813:				
Powellton gravelly loam----------	50	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.68	AASHTO GIN 5 to 8
Toadtown loam----------	40	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.54	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.98	LEP 3 to 9
814:				
Mountyana gravelly loam----------	80	Fair source		Fair source
		OM .5 to 1%	0.08	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.54	
		5 to 15% fragments >10"	0.61	
		Clay 27 to 40%	0.82	
815:				
Mountyana gravelly loam----------	80	Fair source		Fair source
		OM .5 to 1%	0.08	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.54	LEP 3 to 9
		5 to 15% fragments >10"	0.61	
		Clay 27 to 40%	0.82	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
817:				
Lydon very gravelly medial coarse sandy loam	80	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.74	25 to 50% fragment
		25 to 50% fragments 3-10"	0.98	
818:				
Lydon very gravelly medial coarse sandy loam	75	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.74	Slopes 15 to 25%
		25 to 50% fragments 3-10"	0.98	25 to 50% fragment
819:				
Lydon very gravelly medial coarse sandy loam	65	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.74	Slopes > 25%
		25 to 50% fragments 3-10"	0.98	25 to 50% fragment
Rock outcrop, mudflow breccia	20	Not rated		Not rated
820:				
Lydon very gravelly medial coarse sandy loam	60	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.74	Slopes > 25%
		25 to 50% fragments 3-10"	0.98	25 to 50% fragment
Rock outcrop, mudflow breccia	25	Not rated		Not rated
821:				
Lydon very gravelly medial coarse sandy loam	55	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.74	Slopes > 25%
		25 to 50% fragments 3-10"	0.98	25 to 50% fragment
Rock outcrop, mudflow breccia	30	Not rated		Not rated
822:				
Bonepile gravelly medial loam	85	Fair source		Fair source
		AWC 3 - 6" to 60" depth	0.23	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.50	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
823:				
Bonepile gravelly medial loam-----	85	Fair source		Fair source
		AWC 3 - 6" to 60" depth	0.23	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.50	Slopes 15 to 25%
824:				
Beecee very gravelly medial loam--	85	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	Slopes > 25%
		5 to 15% fragments >10"	0.70	
		AWC 3 - 6" to 60" depth	0.99	
825:				
Beecee very gravelly medial loam--	60	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	Slopes > 25%
		5 to 15% fragments >10"	0.70	
		AWC 3 - 6" to 60" depth	0.99	
Lydon very gravelly medial coarse sandy loam-----------------------	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.74	Slopes > 25%
		25 to 50% fragments 3-10"	0.98	25 to 50% fragment
826:				
Redbone gravelly medial sandy loam	80	Fair source		Fair source
		AWC 3 - 6" to 60" depth	0.65	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.74	
827:				
Redbone gravelly medial sandy loam	80	Fair source		Fair source
		AWC 3 - 6" to 60" depth	0.65	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.74	Depth to bedrock 4
829:				
Paradiso loam----------------------	80	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		OM .5 to 1%	0.08	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.68	
830:				
Paradiso loam----------------------	75	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		OM .5 to 1%	0.08	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.68	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
831:				
Surnuf gravelly loam----------	40	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.96	LEP 3 to 9
Bigridge loam----------	30	Poor source		Fair source
		OM < .5%	0.00	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.74	
		AWC 3 - 6" to 60" depth	0.78	
Spine very gravelly loam----------	15	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.84	
832:				
Surnuf gravelly loam----------	40	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.96	Slopes 15 to 25%
				LEP 3 to 9
Bigridge loam----------	30	Poor source		Fair source
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.74	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.78	
Spine very gravelly loam----------	15	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.84	LEP 3 to 9
833:				
Surnuf gravelly loam----------	60	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.96	AASHTO GIN > 8 (lo
				LEP 3 to 9
Bigridge loam----------	15	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.74	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.78	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
833:				
Spine very gravelly loam----------	15	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.84	LEP 3 to 9
834:				
Hietanen gravelly loam----------	50	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	AASHTO GIN > 8 (lo
				Depth to bedrock 4
				LEP 3 to 9
Mac gravelly loam----------	30	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	LEP 3 to 9
		AWC 3 - 6" to 60" depth	0.59	
835:				
Hietanen gravelly loam----------	60	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	AASHTO GIN > 8 (lo
				Slopes 15 to 25%
				Depth to bedrock 4
				LEP 3 to 9
Mac gravelly loam----------	20	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	LEP 3 to 9
		AWC 3 - 6" to 60" depth	0.59	
836:				
Hietanen gravelly loam----------	50	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	Slopes > 25%
				AASHTO GIN > 8 (lo
				Depth to bedrock 4
				LEP 3 to 9
Mac gravelly loam----------	20	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.59	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
836:				
Spine very gravelly loam----------	15	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.84	LEP 3 to 9
837:				
Hietanen gravelly loam----------	35	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.68	Slopes > 25%
				AASHTO GIN > 8 (lo
				Depth to bedrock 4
				LEP 3 to 9
Spine very gravelly loam----------	25	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.84	LEP 3 to 9
Mac gravelly loam----------	20	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.59	LEP 3 to 9
838:				
Dixmine very gravelly loam--------	35	Fair source		Poor source
		Clay 27 to 40%	0.50	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.61	LEP 3 to 9
		25 to 50% fragments 3-10"	0.83	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.87	25 to 50% fragment
Spine very gravelly loam----------	25	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.84	LEP 3 to 9
Mac gravelly loam----------	25	Poor source		Poor source
		OM < .5%	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.59	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
839:				
Chawanakee gravelly sandy loam----	55	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		OM < .5%	0.00	
		pH between 4 and 6.5 above 40"	0.68	
		K factor < .10	0.99	
Billscabin gravelly sandy loam----	35	Poor source		Good source
		OM < .5%	0.00	
		AWC 3 - 6" to 60" depth	0.64	
		pH between 4 and 6.5 above 40"	0.84	
841:				
Billscabin gravelly sandy loam----	50	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.64	
		pH between 4 and 6.5 above 40"	0.84	
Bonneyridge sandy loam----------	35	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.74	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.99	
842:				
Billscabin gravelly sandy loam----	60	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.64	
		pH between 4 and 6.5 above 40"	0.84	
Bonneyridge sandy loam----------	25	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.74	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.99	
846:				
Bonneyridge sandy loam----------	60	Fair source		Good source
		pH between 4 and 6.5 above 40"	0.74	
		AWC 3 - 6" to 60" depth	0.99	
Lewisflat loam--------------------	20	Poor source		Good source
		OM < .5%	0.00	
		pH between 4 and 6.5 above 40"	0.39	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
847:				
Bonneyridge sandy loam----------	60	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.74	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.99	
Lewisflat loam----------	20	Poor source		Fair source
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.39	
848:				
Bonneyridge sandy loam----------	60	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.74	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.99	
Lewisflat loam----------	20	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.39	
850:				
Lewisflat loam----------	85	Poor source		Good source
		OM < .5%	0.00	
		pH between 4 and 6.5 above 40"	0.39	
851:				
Lewisflat loam----------	80	Poor source		Fair source
		OM < .5%	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.39	
852:				
Lewisflat loam----------	75	Poor source		Poor source
		OM < .5%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.39	
860:				
Toadtown gravelly loam----------	60	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.84	LEP 3 to 9
Powellton silt loam----------	20	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.39	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.96	LEP 3 to 9

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
861:				
Toadtown gravelly loam----------	60	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.84	LEP 3 to 9
				Slopes 15 to 25%
Powellton silt loam----------	20	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.39	AASHTO GIN > 8 (lo
		Clay 27 to 40%	0.96	Slopes 15 to 25%
				LEP 3 to 9
862:				
Toadtown gravelly loam----------	60	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.84	AASHTO GIN > 8 (lo
				LEP 3 to 9
Powellton silt loam----------	20	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.39	Slopes > 25%
		Clay 27 to 40%	0.96	AASHTO GIN > 8 (lo
				LEP 3 to 9
863:				
Toadtown gravelly loam----------	60	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.84	AASHTO GIN > 8 (lo
				LEP 3 to 9
Powellton silt loam----------	20	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.39	Slopes > 25%
		Clay 27 to 40%	0.96	AASHTO GIN > 8 (lo
				LEP 3 to 9
880:				
Sites taxadjunct gravelly loam----	50	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.97	LEP 3 to 9
Jocal taxadjunct gravelly loam----	35	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.32	Depth to bedrock 4
		AWC 3 - 6" to 60" depth	0.91	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
881:				
Sites taxadjunct gravelly loam----	50	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.97	LEP 3 to 9
				Slopes 15 to 25%
Jocal taxadjunct gravelly loam----	35	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.32	Slopes 15 to 25%
		AWC 3 - 6" to 60" depth	0.91	Depth to bedrock 4
882:				
Sites taxadjunct gravelly loam----	50	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.97	AASHTO GIN > 8 (lo
				LEP 3 to 9
Jocal taxadjunct gravelly loam----	35	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.32	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.91	Depth to bedrock 4
883:				
Sites taxadjunct gravelly loam----	50	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.97	AASHTO GIN > 8 (lo
				LEP 3 to 9
Jocal taxadjunct gravelly loam----	40	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.32	Slopes > 25%
		AWC 3 - 6" to 60" depth	0.91	Depth to bedrock 4
885:				
Rogerville silt loam----------	75	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		OM .5 to 1%	0.29	LEP 3 to 9
		pH between 4 and 6.5 above 40"	0.61	Depth to bedrock 4
886:				
Rogerville silt loam----------	80	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		OM .5 to 1%	0.29	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.61	LEP 3 to 9
				Depth to bedrock 4

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
892:				
Rogerville silt loam	85	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		OM .5 to 1%	0.29	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.61	LEP 3 to 9
				Depth to bedrock 4
893:				
Rogerville silt loam	85	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		OM .5 to 1%	0.29	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.61	LEP 3 to 9
				Depth to bedrock 4
902:				
Lava flows, Lovejoy basalt	50	Not rated		Not rated
Lumpkin gravelly medial sandy loam	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Fragments 3-10" > 50%	0.00	Fragments >3" > 50
		pH between 4 and 6.5 above 40"	0.54	
903:				
Mudwash gravelly medial sandy loam	45	Fair source		Good source
		pH between 4 and 6.5 above 40"	0.39	
Timberisland very gravelly medial sandy loam	25	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Slopes > 25%
		25 to 50% fragments 3-10"	0.32	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.68	25 to 50% fragment
Lavatop gravelly medial fine sandy loam	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.54	25 to 50% fragment
		Fragments 3-10" < 25%	0.99	
904:				
Lava flows, Lovejoy basalt	60	Not rated		Not rated

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
904:				
Lavatop gravelly medial fine sandy loam	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.54	Slopes 15 to 25%
		Fragments 3-10" < 25%	0.99	25 to 50% fragment
905:				
Lava flows, Lovejoy basalt	60	Not rated		Not rated
Lumpkin gravelly medial sandy loam	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Fragments 3-10" > 50%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.54	Fragments >3" > 50
906:				
Lava flows, Lovejoy basalt	60	Not rated		Not rated
Lumpkin gravelly medial sandy loam	30	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		Fragments 3-10" > 50%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.54	Fragments >3" > 50
911:				
Endoaquolls loam	75	Poor source		Poor source
		Clay > 40%	0.00	Saturation < 1' de
				LEP 3 to 9
923:				
Powderhouse medial sandy loam	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	25 to 50% fragment
McNair medial coarse sandy loam	25	Fair source		Fair source
		AWC 3 - 6" to 60" depth	0.16	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.16	
Greenwell medial sandy loam	20	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.09	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.68	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
924:				
Powderhouse medial sandy loam-----	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	Slopes 15 to 25%
				25 to 50% fragment
McNair medial coarse sandy loam---	25	Fair source		Fair source
		AWC 3 - 6" to 60" depth	0.16	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.16	Depth to bedrock 4
Greenwell medial sandy loam-------	20	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.09	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.68	Slopes 15 to 25%
925:				
Powderhouse medial sandy loam-----	45	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	Slopes > 25%
				25 to 50% fragment
McNair medial coarse sandy loam---	25	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.16	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.16	Depth to bedrock 4
Greenwell medial sandy loam-------	20	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.09	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.68	Slopes > 25%
930:				
Shakeridge gravelly medial coarse sandy loam----------	50	Fair source		Good source
		AWC 3 - 6" to 60" depth	0.11	
		pH between 4 and 6.5 above 40"	0.92	
Timberisland very gravelly medial sandy loam----------	40	Poor source		Fair source
		AWC < 3" to 60" depth	0.00	Depth to bedrock 4
		25 to 50% fragments 3-10"	0.32	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.68	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
931:				
Shakeridge gravelly medial coarse sandy loam	40	Fair source		Fair source
		AWC 3 - 6" to 60" depth	0.11	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.92	
Mudwash gravelly medial sandy loam	25	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.39	Slopes 15 to 25%
Timberisland very gravelly medial sandy loam	15	Poor source		Fair source
		AWC < 3" to 60" depth	0.00	Slopes 15 to 25%
		25 to 50% fragments 3-10"	0.32	Depth to bedrock 4
		pH between 4 and 6.5 above 40"	0.68	25 to 50% fragment
932:				
Shakeridge gravelly medial coarse sandy loam	50	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.11	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.92	
Mudwash gravelly medial sandy loam	35	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.39	Slopes > 25%
933:				
Shakeridge gravelly medial coarse sandy loam	80	Fair source		Poor source
		AWC 3 - 6" to 60" depth	0.11	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.92	
934:				
Mudwash gravelly medial sandy loam	80	Fair source		Good source
		pH between 4 and 6.5 above 40"	0.39	
939:				
Fluvaquentic Humaquepts very fine sandy loam	85	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.68	Saturation from 1
940:				
Dejonah gravelly loam	50	Fair source		Good source
		pH between 4 and 6.5 above 40"	0.84	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
940:				
Stagpoint loam	30	Poor source		Fair source
		More than 15% fragments >10"	0.00	25 to 50% fragment
		pH between 4 and 6.5 above 40"	0.46	
		25 to 50% fragments 3-10"	0.86	
		AWC 3 - 6" to 60" depth	0.99	
941:				
Dejonah gravelly loam	50	Fair source		Fair source
		pH between 4 and 6.5 above 40"	0.84	Slopes 15 to 25%
Stagpoint loam	30	Poor source		Fair source
		More than 15% fragments >10"	0.00	Slopes 15 to 25%
		pH between 4 and 6.5 above 40"	0.46	25 to 50% fragment
		25 to 50% fragments 3-10"	0.86	
		AWC 3 - 6" to 60" depth	0.99	
942:				
Stagpoint loam	50	Poor source		Poor source
		More than 15% fragments >10"	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.46	25 to 50% fragment
		25 to 50% fragments 3-10"	0.86	
		AWC 3 - 6" to 60" depth	0.99	
Dejonah gravelly loam	30	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.84	Slopes > 25%
948:				
Stagpoint loam	55	Poor source		Poor source
		More than 15% fragments >10"	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.46	25 to 50% fragment
		25 to 50% fragments 3-10"	0.86	
		AWC 3 - 6" to 60" depth	0.99	
Dejonah gravelly loam	35	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.84	Slopes > 25%
949:				
Rogerville taxadjunct fine sandy loam	80	Fair source		Poor source
		pH between 4 and 6.5 above 40"	0.32	Slopes > 25%
		5 to 15% fragments >10"	0.80	Depth to bedrock 4

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
950:				
Lumpkin taxadjunct very gravelly medial very fine sandy loam------	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.68	
Rock outcrop, olivine basalt, andesite, or mudflow----------	25	Not rated		Not rated
Powderhouse medial sandy loam-----	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	25 to 50% fragment
951:				
Lumpkin taxadjunct very gravelly medial very fine sandy loam------	40	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.68	Slopes 15 to 25%
Rock outcrop, andesite----------	25	Not rated		Not rated
Powderhouse medial sandy loam-----	20	Poor source		Poor source
		AWC < 3" to 60" depth	0.00	Depth to bedrock <
		pH between 4 and 6.5 above 40"	0.50	Slopes 15 to 25%
				25 to 50% fragment
960:				
Surnuf gravelly loam, high elevation------------------------	85	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.84	LEP 3 to 9
		5 to 15% fragments >10"	0.95	
961:				
Surnuf gravelly loam, high elevation------------------------	85	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.84	LEP 3 to 9
		5 to 15% fragments >10"	0.95	

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of ro
		Rating class and limiting features	Value	Rating cla limiting fe
962:				
Surnuf gravelly loam, high elevation	85	Poor source		Poor source
		Clay > 40%	0.00	AASHTO GIN > 8 (lo
		pH between 4 and 6.5 above 40"	0.84	Slopes 15 to 25%
		5 to 15% fragments >10"	0.95	LEP 3 to 9
963:				
Surnuf gravelly loam, high elevation	85	Poor source		Poor source
		Clay > 40%	0.00	Slopes > 25%
		pH between 4 and 6.5 above 40"	0.84	AASHTO GIN > 8 (lo
		5 to 15% fragments >10"	0.95	LEP 3 to 9
990:				
Riverwash, frequently flooded	100	Not rated		Not rated
991:				
Xerofluvents sandy loam, frequently flooded	75	Fair source		Fair source
		OM .5 to 1%	0.68	Saturation from 1
		K factor < .10	0.99	
995:				
Pits, gravel	100	Not rated		Not rated
996:				
Dumps, excavated material	100	Not rated		Not rated
997:				
Pits	95	Not rated		Not rated
998:				
Dumps, landfill	100	Not rated		Not rated
999:				
Water	100	Not rated		Not rated

Table 18b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential of roa
		Rating class and limiting features	Value	Rating cla limiting fea
DAM:				
Dam, manmade	100	Not rated		Not rated

The interpretation for reclamation material evaluates the following soil properties at variable dep amount of sand, clay, and fragments; the content of organic matter (OM); the wind erodibility group (WEG water capacity (AWC); pH; salinity (EC); the amount of sodium (SAR); carbonates; and susceptibility of t erosion (K factor).

The interpretation for roadfill evaluates the following soil properties at variable depths in the s potential expressed as linear extensibility percent (LEP), depth to bedrock or a cemented pan, wetness, expressed as AASHTO group index number (AASHTO GIN), and content of fragments.

Table 19a.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsi
numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential li
is based on the limitation with the highest value. Only the three highest value limitations are listed.
limitations. Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of t
and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
100:				
Anita clay	60	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	
		Saturation < 2' depth	1.00	
Galt clay	25	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
104:				
Bosquejo clay	85	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability .6-2"/hr
		Saturation between 2-4'	0.18	
105:				
Busacca clay loam	85	Limitations		No limitations
		Ponding (any duration)	1.00	
		Shrink-swell (LEP 3-6)	0.78	
108:				
Tuscan gravelly loam	45	Limitations		Limitations
		Thin layer	1.00	Depth to pan < 20"
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
Igo gravelly loam	20	Limitations		Limitations
		Thin layer	1.00	Depth to pan < 20"
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
Anita clay	15	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	
		Saturation < 2' depth	1.00	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
109:				
Bosquejo clay loam	85	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability .6-2"/hr
		Saturation between 2-4'	0.18	
110:				
Bosquejo silt loam, overwash, occasionally flooded	90	Limitations		No limitations
		Ponding (any duration)	1.00	
		Shrink-swell (LEP >6)	1.00	
		MH or CH Unified and PI <40%	0.50	
111yu:				
Auburn loam	40	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Piping	1.00	Slopes > 7%
				Permeability .6-2"/hr
Sobrante loam	40	Limitations		Limitations
		Piping	0.98	Slopes > 7%
		Thin layer	0.93	Depth to bedrock from
		Shrink-swell (LEP 3-6)	0.50	Permeability .6-2"/hr
114yu:				
Auburn gravelly loam	40	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Piping	1.00	Slopes > 7%
				Permeability .6-2"/hr
Sobrante gravelly loam	40	Limitations		Limitations
		Thin layer	0.70	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from
				Permeability .6-2"/hr
118:				
Xerorthents, tailings	80	Limitations		Limitations
		Seepage	1.00	Permeability > 2"/hr
				Slopes 2 to 7%
118co:				
Clear Lake clay, frequently flooded	90	Limitations		No limitations
		Shrink-swell (LEP >6)	1.00	
		MH or CH Unified and PI >=40%	1.00	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
119:				
Xerorthents, tailings	70	Limitations		Limitations
		Seepage	1.00	Permeability > 2"/hr
Urban land	30	Not rated		Not rated
119yu:				
Auburn gravelly loam	30	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Piping	1.00	Depth to bedrock < 20
				Permeability .6-2"/hr
Sobrante gravelly loam	30	Limitations		Limitations
		Thin layer	0.70	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from
				Permeability .6-2"/hr
Rock outcrop	20	Not rated		Not rated
120:				
Gridley taxadjunct clay loam	80	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		Thin layer	0.99	
121:				
Boga loam	45	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability .6-2"/hr
		Saturation between 2-4'	0.53	
		Shrink-swell (LEP 3-6)	0.38	
Loemstone loam	40	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability .6-2"/hr
		Shrink-swell (LEP 3-6)	0.56	
		Saturation between 2-4'	0.53	
121su:				
Columbia fine sandy loam, frequently flooded	80	No limitations		Limitations
				Permeability > 2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
125:				
Gridley taxadjunct loam----------	65	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 6
		Saturation < 2' depth	1.00	
		Thin layer	0.99	
Calcic Haploxerolls sandy loam----	20	Limitations		Limitations
		Piping	0.78	Permeability > 2"/hr
		Saturation between 2-4'	0.78	
126:				
Liveoak sandy loam----------	85	Limitations		Limitations
		Saturation between 2-4'	0.86	Permeability > 2"/hr
127:				
Gridley taxadjunct loam----------	85	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 6
		Saturation < 2' depth	1.00	
		Thin layer	0.99	
130:				
Eastbiggs loam----------	80	Limitations		Limitations
		Saturation < 2' depth	1.00	Depth to pan 20 to 6
		Shrink-swell (LEP >6)	1.00	Permeability .6-2"/h
		Thin layer	0.93	
133:				
Eastbiggs loam----------	50	Limitations		Limitations
		Saturation < 2' depth	1.00	Depth to pan 20 to 6
		Shrink-swell (LEP >6)	1.00	Permeability .6-2"/h
		Thin layer	0.93	
Galt clay loam----------	40	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 6
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
136:				
Duric Xerarents, cut----------	35	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	
		Saturation < 2' depth	1.00	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
136:				
Duric Xerarents, fill	30	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability > 2"/hr
		Saturation between 2-4'	0.24	Depth to pan 20 to 60
		Thin layer	0.16	
Eastbiggs fine sandy loam, leveled	25	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		Thin layer	0.86	
138su:				
Liveoak sandy clay loam	85	Limitations		Limitations
		Saturation between 2-4'	0.86	Permeability > 2"/hr
139su:				
Liveoak taxadjunct loam, frequently flooded	45	Limitations		Limitations
		Piping	1.00	Permeability .6-2"/hr
		Thin layer	0.03	Depth to pan 20 to 60
Galt taxadjunct clay loam, frequently flooded	40	Limitations		Limitations
		Saturation < 2' depth	1.00	Depth to pan 20 to 60
		Thin layer	0.99	Permeability .6-2"/hr
		Piping	0.50	
143su:				
Marcum clay loam	45	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Depth to bedrock from
		MH or CH Unified and PI <40%	0.50	
		Thin layer	0.34	
Gridley clay loam	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Depth to bedrock from
		Thin layer	0.61	
		MH or CH Unified and PI <40%	0.50	
149yu:				
Flanly sandy loam	80	Limitations		Limitations
		Piping	1.00	Slopes > 7%
		Thin layer	0.74	Depth to bedrock from
		Shrink-swell (LEP 3-6)	0.50	Permeability .6-2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
150:				
Columbia stratified sand to fine sandy loam	85	Limitations		Limitations
		Saturation between 2-4'	0.18	Permeability > 2"/hr
150su:				
Olashes sandy loam	85	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Permeability > 2"/hr
151yu:				
Flanly sandy loam	80	Limitations		Limitations
		Piping	1.00	Slopes > 7%
		Thin layer	0.74	Depth to bedrock fro
		Shrink-swell (LEP 3-6)	0.50	Permeability .6-2"/h
152:				
Gianella fine sandy loam, frequently flooded	85	Limitations		Limitations
		Piping	1.00	Permeability > 2"/hr
153:				
Gianella sandy loam, frequently flooded	85	No limitations		Limitations
				Permeability > 2"/hr
154:				
Gianella silt loam, frequently flooded	85	Limitations		Limitations
		Piping	1.00	Permeability > 2"/hr
		Seepage	0.10	
158:				
Gianella fine sandy loam, occasionally flooded	85	Limitations		Limitations
		Seepage	0.10	Permeability > 2"/hr
160:				
Gianella loam, occasionally flooded	85	Limitations		Limitations
		Piping	1.00	Permeability > 2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
161:				
Gianella fine sandy loam, rarely flooded	90	Limitations		Limitations
		Seepage	0.10	Permeability > 2"/hr
162:				
Gianella loam, rarely flooded	90	Limitations		Limitations
		Piping	1.00	Permeability > 2"/hr
163yu:				
Holillipah loamy sand	85	No limitations		Limitations
				Permeability > 2"/hr
165yu:				
Holland loam	40	Limitations		Limitations
		Piping	0.85	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.50	Permeability .6-2"/hr
Hoda loam	25	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Permeability .6-2"/hr
Hotaw loam	20	Limitations		Limitations
		Piping	0.95	Slopes > 7%
		Thin layer	0.74	Depth to bedrock from
		Shrink-swell (LEP 3-6)	0.50	Permeability .6-2"/hr
173yu:				
Hotaw loam	45	Limitations		Limitations
		Piping	0.95	Slopes > 7%
		Thin layer	0.74	Depth to bedrock from
		Shrink-swell (LEP 3-6)	0.50	Permeability .6-2"/hr
Chawanakee gravelly sandy loam	20	Limitations		Limitations
		Thin layer	1.00	Permeability > 2"/hr
				Depth to bedrock < 20
				Slopes > 7%
Holland loam	15	Limitations		Limitations
		Piping	0.85	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.50	Permeability .6-2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
175:				
Farwell clay loam, rarely flooded	85	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.92	Permeability .6-2"/hr
176:				
Farwell loam, occasionally flooded	85	Limitations		Limitations
		Piping	0.15	Permeability .6-2"/hr
176yu:				
Jocal loam	80	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
		Piping	0.30	Permeability .6-2"/hr
177:				
Farwell silt loam, occasionally flooded	85	No limitations		Limitations
				Permeability > 2"/hr
178:				
Arbuckle gravelly loam	87	No limitations		Limitations
				Permeability .6-2"/hr
179:				
Moda taxadjunct loam	65	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	Permeability .6-2"/hr
		Shrink-swell (LEP >6)	1.00	
Arbuckle gravelly loam	20	No limitations		Limitations
				Permeability .6-2"/hr
180:				
Dodgeland silty clay loam, occasionally flooded	85	Limitations		No limitations
		Ponding (any duration)	1.00	
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
181:				
Dodgeland silty clay loam, frequently flooded	80	Limitations		No limitations
		Ponding (any duration)	1.00	
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
188yu:				
Mariposa taxadjunct gravelly loam	80	Limitations		Limitations
		Thin layer	0.99	Slopes > 7%
				Depth to bedrock from
				Permeability .6-2"/hr
189:				
Esquon silt loam, overwash	90	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability > 2"/hr
		Shrink-swell (LEP >6)	1.00	
		Saturation between 2-4'	0.86	
189yu:				
Mariposa taxadjunct gravelly loam	80	Limitations		Limitations
		Thin layer	0.99	Slopes > 7%
				Depth to bedrock from
				Permeability .6-2"/hr
196yu:				
Mildred cobbly loam	80	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Thin layer	0.99	Depth to bedrock from
		MH or CH Unified and PI <40%	0.50	
200:				
Parrott silt loam, occasionally flooded	85	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability .6-2"/hr
		Piping	0.78	
201:				
Parrott silt loam, frequently flooded	85	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability .6-2"/hr
		Piping	0.78	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
203:				
Kusalslough silty clay loam, occasionally flooded	85	Limitations		No limitations
		Ponding (any duration)	1.00	
		Shrink-swell (LEP >6)	1.00	
		MH or CH Unified and PI <40%	0.50	
205:				
Parrott silt loam, frequently flooded	50	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability .6-2"/h
		Piping	0.78	
Vermet silt loam, frequently flooded	35	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability .6-2"/h
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP 3-6)	0.68	
206:				
Islandbar sandy loam	60	No limitations		Limitations
				Permeability > 2"/hr
				Slopes > 7%
Chawanakee gravelly sandy loam	30	Limitations		Limitations
		Thin layer	1.00	Permeability > 2"/hr
				Depth to bedrock < 2
				Slopes > 7%
207:				
Islandbar sandy loam	60	No limitations		Limitations
				Slopes > 7%
				Permeability > 2"/hr
Chawanakee gravelly sandy loam	30	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock < 2
208:				
Islandbar sandy loam	60	No limitations		Limitations
				Slopes > 7%
				Permeability > 2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
208:				
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock < 20
209:				
Islandbar sandy loam----------	60	No limitations		Limitations
				Slopes > 7%
				Permeability > 2"/hr
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock < 20
210:				
Featherfalls sandy loam----------	50	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.92	Slopes > 7%
				Permeability .6-2"/hr
Islandbar sandy loam----------	35	No limitations		Limitations
				Permeability > 2"/hr
				Slopes > 7%
211:				
Featherfalls sandy loam----------	55	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.92	Slopes > 7%
				Permeability .6-2"/hr
Islandbar sandy loam----------	35	No limitations		Limitations
				Slopes > 7%
				Permeability > 2"/hr
212:				
Featherfalls sandy loam----------	55	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.92	Slopes > 7%
				Permeability .6-2"/hr
Islandbar sandy loam----------	35	No limitations		Limitations
				Slopes > 7%
				Permeability > 2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
213:				
Featherfalls sandy loam----------	45	Limitations Shrink-swell (LEP 3-6)	0.92	Limitations Slopes > 7% Permeability .6-2"/h
Islandbar sandy loam----------	35	No limitations		Limitations Slopes > 7% Permeability > 2"/hr
214:				
Crystalhill gravelly coarse sandy loam----------	35	Limitations Seepage	0.50	Limitations Permeability > 2"/hr Slopes > 7%
Oregongulch gravelly sandy loam---	20	No limitations		Limitations Permeability > 2"/hr Slopes > 7% Depth to bedrock fro
Craigsaddle coarse sandy loam-----	20	No limitations		Limitations Permeability > 2"/hr Slopes 2 to 7% Depth to bedrock fro
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
215:				
Crystalhill gravelly coarse sandy loam----------	35	Limitations Seepage	0.50	Limitations Slopes > 7% Permeability > 2"/hr
Oregongulch gravelly sandy loam---	20	No limitations		Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock fro
Craigsaddle coarse sandy loam-----	20	No limitations		Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock fro
Rock outcrop, trondhjemite--------	10	Not rated		Not rated

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
216:				
Crystalhill gravelly coarse sandy loam	35	Limitations Seepage	 0.50	Limitations Slopes > 7% Permeability > 2"/hr
Oregongulch gravelly sandy loam---	20	No limitations		Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock fro
Craigsaddle coarse sandy loam-----	20	No limitations		Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock fro
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
217:				
Crystalhill gravelly coarse sandy loam	35	Limitations Seepage	 0.50	Limitations Slopes > 7% Permeability > 2"/hr
Oregongulch gravelly sandy loam---	20	No limitations		Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock fro
Craigsaddle coarse sandy loam-----	20	No limitations		Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock fro
Rock outcrop, trondhjemite--------	10	Not rated		Not rated
218:				
Rock outcrop, quartz diorite------	60	Not rated		Not rated

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
218:				
Lithic Xerorthents gravelly sandy loam	20	Not rated		Limitations Slopes > 7% Depth to bedrock < 2
Chawanakee gravelly sandy loam	15	Limitations Thin layer	 1.00	Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock < 2
219:				
Rock outcrop, quartz diorite	60	Not rated		Not rated
Lithic Xerorthents gravelly sandy loam	20	Not rated		Limitations Slopes > 7% Depth to bedrock < 2
Chawanakee gravelly sandy loam	15	Limitations Thin layer	 1.00	Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock < 2
220:				
Esquon clay, frequently flooded	60	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	 1.00 1.00 1.00	Limitations Depth to pan 20 to 6
Clear Lake silty clay loam, overwash	30	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	 1.00 1.00 1.00	No limitations
221yu:				
Sites loam	85	Limitations Shrink-swell (LEP 3-6) MH or CH Unified and PI <40% Piping	 0.50 0.50 0.19	Limitations Slopes 2 to 7% Permeability .6-2"/h

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
222yu:				
Sites loam	85	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Permeability .6-2"/hr
		Piping	0.19	
225yu:				
Sites gravelly loam, bedrock substratum	80	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes 2 to 7%
		MH or CH Unified and PI <40%	0.50	Depth to bedrock from
		Thin layer	0.04	
226yu:				
Sites gravelly loam, bedrock substratum	80	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Depth to bedrock from
		Thin layer	0.04	
227yu:				
Sites gravelly loam, bedrock substratum	80	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Depth to bedrock from
		Thin layer	0.04	
242yu:				
Surnuf loam	80	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Piping	1.00	
243yu:				
Surnuf loam	80	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Piping	1.00	
244yu:				
Surnuf loam	80	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Piping	1.00	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
245:				
Surnuf loam	80	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Piping	1.00	
248yu:				
Trainer loam	85	No limitations		Limitations
				Permeability > 2"/hr
250:				
Llanoseco, occasionally flooded	90	Limitations		No limitations
		Ponding (any duration)	1.00	
		Shrink-swell (LEP >6)	1.00	
		MH or CH Unified and PI <40%	0.50	
252:				
Whitecabin silty clay, occasionally flooded	60	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 6
		Shrink-swell (LEP >6)	1.00	
		Saturation between 2-4'	0.98	
Ordferry silty clay, occasionally flooded	25	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 6
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
252yu:				
Woodleaf gravelly loam	80	Limitations		Limitations
		Thin layer	0.91	Slopes > 7%
		Fragments (>3") 15-35%	0.66	Depth to bedrock fro
		Shrink-swell (LEP 3-6)	0.50	
253yu:				
Woodleaf gravelly loam	80	Limitations		Limitations
		Thin layer	0.91	Slopes > 7%
		Fragments (>3") 15-35%	0.66	Depth to bedrock fro
		Shrink-swell (LEP 3-6)	0.50	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
255:				
Whitecabin silty clay loam, occasionally flooded	60	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Shrink-swell (LEP >6)	1.00	
		Saturation between 2-4'	0.98	
Ordferry silty clay, occasionally flooded	30	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
256:				
Whitecabin silt loam, occasionally flooded	85	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Shrink-swell (LEP >6)	1.00	
		Saturation between 2-4'	0.98	
257:				
Llanoseco, frequently flooded	90	Limitations		No limitations
		Ponding (any duration)	1.00	
		Shrink-swell (LEP >6)	1.00	
		MH or CH Unified and PI <40%	0.50	
258:				
Codora, occasionally flooded	85	Limitations		No limitations
		Ponding (any duration)	1.00	
		Shrink-swell (LEP 3-6)	0.78	
		Saturation between 2-4'	0.32	
260:				
Ordferry silty clay, occasionally flooded	90	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
280:				
Columbia taxadjunct stratified very fine sandy loam	80	Limitations		Limitations
		Saturation < 2' depth	1.00	Permeability > 2"/hr
		Piping	1.00	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
290:				
Perkins gravelly loam	90	No limitations		Limitations Permeability > 2"/hr
300:				
Redsluff gravelly loam	80	Limitations Seepage Saturation between 2-4'	 1.00 0.53	Limitations Permeability > 2"/hr
301:				
Wafap gravelly loam	70	Limitations Saturation < 2' depth Shrink-swell (LEP >6) Fragments (>3") > 35%	 1.00 1.00 1.00	Limitations Depth to pan 20 to 6
Hamslough clay	15	Limitations Ponding (any duration) Saturation < 2' depth Shrink-swell (LEP >6)	 1.00 1.00 1.00	Limitations Depth to pan 20 to 6
302:				
Redtough loam	50	Limitations Thin layer Saturation < 2' depth Fragments (>3") 15-35%	 1.00 1.00 0.30	Limitations Depth to pan < 20" Permeability .6-2"/h
Redswale cobbly loam	35	Limitations Ponding (any duration) Thin layer Saturation < 2' depth	 1.00 1.00 1.00	Limitations Depth to pan < 20"
303:				
Munjar gravelly loam	60	Limitations Saturation < 2' depth Shrink-swell (LEP >6) Thin layer	 1.00 1.00 0.83	Limitations Depth to pan 20 to 6 Permeability .6-2"/h
Tuscan taxadjunct gravelly clay loam	20	Limitations Saturation < 2' depth Shrink-swell (LEP >6) Thin layer	 1.00 1.00 0.88	Limitations Depth to pan 20 to 6

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
303:				
Galt clay	10	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
304:				
Redtough loam	80	Limitations		Limitations
		Thin layer	1.00	Depth to pan < 20"
		Fragments (>3") 15-35%	0.30	Slopes > 7%
		Piping	0.18	Permeability .6-2"/hr
305:				
Redtough gravelly loam	45	Limitations		Limitations
		Thin layer	1.00	Depth to pan < 20"
		Saturation < 2' depth	1.00	Permeability .6-2"/hr
		Piping	0.16	
Redswale loam	25	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	
		Saturation < 2' depth	1.00	
Anita, gravelly duripan	20	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	
		Saturation < 2' depth	1.00	
306:				
Duric Xerarents, fill	50	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability > 2"/hr
		Saturation < 2' depth	1.00	Depth to pan 20 to 60
		Thin layer	0.46	
Duric Xerarents, cut	40	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	Permeability > 2"/hr
		Saturation < 2' depth	1.00	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
307:				
Duric Xerarents clay loam, leveled	70	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	
		Saturation < 2' depth	1.00	
310:				
Kimball loam	85	Limitations		Limitations
		Thin layer	1.00	Permeability .6-2"/h
		Piping	0.47	
317:				
Thompsonflat loam	75	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.32	Permeability .6-2"/h
				Slopes 2 to 7%
318:				
Thompsonflat fine sandy loam	50	No limitations		Limitations
				Slopes 2 to 7%
Oroville gravelly fine sandy loam	40	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 6
		Saturation < 2' depth	1.00	Slopes 2 to 7%
		Shrink-swell (LEP >6)	1.00	
320:				
Vistarobles sandy loam	50	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability > 2"/hr
		Thin layer	1.00	Depth to pan < 20"
		Saturation < 2' depth	1.00	
Redding loam	40	Limitations		Limitations
		Saturation < 2' depth	0.99	Depth to pan 20 to 6
		Thin layer	0.70	Permeability .6-2"/h
321:				
Durixeralfs, fine-loamy, gravelly fine sandy loam	50	Limitations		Limitations
		Saturation < 2' depth	1.00	Depth to pan 20 to 6
		Thin layer	0.93	Depth to bedrock fro
				Permeability .6-2"/h

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
321:				
Durixeralfs, loamy-skeletal, gravelly fine sandy loam---------	20	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	Depth to bedrock from
		Saturation < 2' depth	1.00	
Typic Petraquepts silty clay------	15	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	Depth to bedrock from
		Saturation < 2' depth	1.00	
330:				
Wilsoncreek loam, occasionally flooded---------------------------	60	Limitations		Limitations
		Piping	0.97	Permeability > 2"/hr
Trainer loam, occasionally flooded---------------------------	25	Limitations		Limitations
		Piping	0.87	Permeability > 2"/hr
		Saturation between 2-4'	0.46	
331:				
Thompsonflat loam-----------------	85	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.32	Slopes > 7%
				Permeability .6-2"/hr
335:				
Galt clay loam--------------------	85	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
336:				
Galt clay-------------------------	90	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
337:				
Galt clay loam--------------------	85	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
338:				
Oxyaquic Xerofluvents silt loam---	90	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability > 2"/hr
		Seepage	0.50	
		Saturation between 2-4'	0.18	
339:				
Oxyaquic Xerofluvents sandy loam, frequently flooded---	90	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability > 2"/hr
		Seepage	0.50	
		Saturation between 2-4'	0.18	
340:				
Rock outcrop, Lovejoy basalt------	35	Not rated		Not rated
Thermalrocks very gravelly loam---	25	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 2
		Fragments (>3") 15-35%	0.50	Slopes 2 to 7%
Campbellhills gravelly loam-------	20	Limitations		Limitations
		Saturation < 2' depth	1.00	Slopes 2 to 7%
		Shrink-swell (LEP 3-6)	0.82	Depth to bedrock fro
		Thin layer	0.11	
341:				
Elsey loam------------------------	25	Limitations		Limitations
		Saturation < 2' depth	1.00	Depth to bedrock fro
		Fragments (>3") 15-35%	0.90	Permeability .6-2"/h
		Thin layer	0.56	Slopes 2 to 7%
Beatsonhollow gravelly loam-------	25	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to bedrock < 2
		Thin layer	1.00	Slopes 2 to 7%
		Saturation < 2' depth	1.00	Permeability .6-2"/h
Campbellhills gravelly loam-------	20	Limitations		Limitations
		Saturation < 2' depth	1.00	Depth to bedrock fro
		Shrink-swell (LEP 3-6)	0.82	
		Thin layer	0.11	
Rock outcrop, Lovejoy basalt------	20	Not rated		Not rated

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
342:				
Thermalrocks very gravelly loam---	40	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Fragments (>3") 15-35%	0.50	Slopes > 7%
Beatsonhollow taxadjunct fine sandy loam----------	35	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Saturation < 2' depth	1.00	Permeability .6-2"/hr
Rock outcrop, Lovejoy basalt------	15	Not rated		Not rated
343:				
Coalcanyon very cobbly loam-------	50	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Piping	0.22	Permeability .6-2"/hr
		Shrink-swell (LEP 3-6)	0.18	
Coonhollow gravelly loam----------	35	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Piping	0.28	Depth to bedrock from
		Thin layer	0.26	Permeability .6-2"/hr
344:				
Coalcanyon very cobbly loam-------	45	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Piping	0.22	Permeability .6-2"/hr
		Shrink-swell (LEP 3-6)	0.18	
Coonhollow gravelly loam----------	30	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Piping	0.28	Depth to bedrock from
		Thin layer	0.26	Permeability .6-2"/hr
Rock outcrop, Lovejoy basalt------	15	Not rated		Not rated
346:				
Cherotable loam-------------------	50	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%
		MH or CH Unified and PI <40%	0.50	Depth to bedrock from
		Thin layer	0.26	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
346:				
Elsey loam	35	Limitations		Limitations
		Saturation < 2' depth	1.00	Depth to bedrock fro
		Fragments (>3") 15-35%	0.90	Slopes 2 to 7%
		Thin layer	0.56	Permeability .6-2"/h
347:				
Haplic Palexeralfs loam	90	Limitations		Limitations
		Shrink-swell (LEP >6)	0.99	Slopes 2 to 7%
		Fragments (>3") 15-35%	0.17	
353:				
Cherokeespring gravelly silt loam	80	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Permeability .6-2"/h
355:				
Coalcanyon very cobbly loam	55	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Piping	0.22	Permeability .6-2"/h
		Shrink-swell (LEP 3-6)	0.18	
Talus	35	Not rated		Not rated
356:				
Coalcanyon very cobbly loam	45	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Piping	0.22	Permeability .6-2"/h
		Shrink-swell (LEP 3-6)	0.18	
Rock outcrop, basalt cliffs	20	Not rated		Not rated
Talus	20	Not rated		Not rated
Coonhollow gravelly loam	10	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Piping	0.28	Depth to bedrock fro
		Thin layer	0.26	Permeability .6-2"/h
360:				
Typic Xerofluvents, coarse-loamy--	45	Limitations		Limitations
		Saturation between 2-4'	0.18	Permeability > 2"/hr
		Seepage	0.10	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
360:				
Typic Xerofluvents, sandy-skeletal	40	Limitations		Limitations
		Seepage	1.00	Permeability > 2"/hr
		Saturation between 2-4'	0.18	
361:				
Typic Xerofluvents, sandy-skeletal	85	Limitations		Limitations
		Seepage	1.00	Permeability > 2"/hr
		Saturation between 2-4'	0.18	
362:				
Ultic Haploxeralfs, sandstone, low elevation, very deep----------	60	No limitations		Limitations
				Permeability > 2"/hr
				Slopes 2 to 7%
Ultic Haploxeralfs, sandstone, low elevation, deep----------	25	Limitations		Limitations
		Piping	1.00	Permeability > 2"/hr
		Thin layer	0.42	Depth to bedrock from
				Slopes 2 to 7%
363:				
Ultic Haploxeralfs, sandstone, low elevation, very deep----------	60	No limitations		Limitations
				Permeability > 2"/hr
				Slopes 2 to 7%
Ultic Haploxeralfs, sandstone, low elevation, deep----------	30	Limitations		Limitations
		Piping	1.00	Slopes > 7%
		Thin layer	0.42	Permeability > 2"/hr
				Depth to bedrock from
364:				
Ultic Haploxeralfs, sandstone, low elevation, deep----------	50	Limitations		Limitations
		Piping	1.00	Slopes > 7%
		Thin layer	0.42	Permeability > 2"/hr
				Depth to bedrock from

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
364:				
Ultic Haploxeralfs, sandstone, low elevation, very deep	40	No limitations		Limitations Slopes > 7% Permeability > 2"/hr
365:				
Palexerults gravelly loam	80	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Permeability .6-2"/h
366:				
Palexerults gravelly loam	80	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Permeability .6-2"/h
370:				
Palexerults gravelly loam	80	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%
		MH or CH Unified and PI <40%	0.50	Permeability .6-2"/h
375:				
Wickscorner loam	80	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%
376:				
Flagcanyon gravelly loam	50	Limitations		Limitations
		Saturation < 2' depth	0.99	Depth to pan 20 to 6
		Thin layer	0.86	Slopes 2 to 7%
		Shrink-swell (LEP 3-6)	0.32	Permeability .6-2"/h
Wickscorner loam	35	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%
377:				
Flagcanyon taxadjunct fine sandy loam	55	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 6
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
377:				
Durixeralfs, clayey-skeletal, loam	20	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	
		Saturation < 2' depth	1.00	
Duraquerts gravelly clay----------	15	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
400:				
Subaco taxadjunct clay----------	85	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
415:				
Ignord fine sandy loam----------	90	No limitations		Limitations
				Permeability > 2"/hr
416:				
Calcic Haploxerolls sandy loam----	90	Limitations		Limitations
		Piping	1.00	Permeability > 2"/hr
		Saturation between 2-4'	0.78	
418:				
Almendra loam----------	85	Limitations		Limitations
		Piping	0.96	Permeability .6-2"/hr
419:				
Conejo fine sandy loam, overwash--	85	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.78	Permeability > 2"/hr
		Piping	0.08	
420:				
Conejo clay loam----------	85	Limitations		Limitations
		Piping	0.06	Permeability > 2"/hr
425:				
Vina fine sandy loam----------	85	Limitations		Limitations
		Seepage	0.10	Permeability > 2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
426:				
Vina loam	85	Limitations		Limitations
		Piping	1.00	Permeability .6-2"/h
439:				
Oxyaquic Xerofluvents clay	85	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability > 2"/hr
		Shrink-swell (LEP >6)	1.00	
		Saturation < 2' depth	0.99	
440:				
Oxyaquic Xerofluvents silt loam, frequently flooded	80	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability > 2"/hr
		Saturation between 2-4'	0.86	
		Piping	0.81	
441:				
Oxyaquic Xerofluvents very fine sandy loam	90	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability > 2"/hr
		Piping	0.98	
		Saturation between 2-4'	0.86	
442:				
Durixerolls clay loam	55	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 6
		Saturation < 2' depth	1.00	
		Thin layer	0.77	
Haploxerolls clay loam	30	Limitations		Limitations
		Saturation between 2-4'	0.86	Permeability .6-2"/h
		Piping	0.05	Depth to pan 20 to 6
		Thin layer	0.01	
443:				
Durixerolls loam	60	Limitations		Limitations
		Saturation < 2' depth	1.00	Depth to pan 20 to 6
		Thin layer	0.95	Permeability .6-2"/h
		Piping	0.37	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
443:				
Haploxerolls loam	25	Limitations		Limitations
		Saturation between 2-4'	0.86	Permeability > 2"/hr
		Piping	0.46	Depth to pan 20 to 60
		Thin layer	0.06	
445:				
Chico loam	85	Limitations		Limitations
		Piping	0.08	Permeability .6-2"/hr
		Shrink-swell (LEP 3-6)	0.01	
447:				
Charger fine sandy loam	80	Limitations		Limitations
		Saturation between 2-4'	0.18	Permeability > 2"/hr
		Seepage	0.10	
448:				
Haploxerolls clay loam	75	No limitations		Limitations
				Permeability .6-2"/hr
449:				
Haploxerolls loam	75	Limitations		Limitations
		Piping	0.54	Permeability > 2"/hr
500:				
Lofgren clay	45	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		MH or CH Unified and PI >=40%	1.00	
Blavo clay	40	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		MH or CH Unified and PI >=40%	1.00	
501:				
Lofgren clay, occasionally flooded	45	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		MH or CH Unified and PI >=40%	1.00	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
501:				
Blavo clay, occasionally flooded--	40	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 6
		Saturation < 2' depth	1.00	
		MH or CH Unified and PI >=40%	1.00	
502:				
Blavo silt loam, overwash, occasionally flooded----------	80	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 6
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
519:				
Edjobe silty clay----------	85	Limitations		No limitations
		Ponding (any duration)	1.00	
		Shrink-swell (LEP >6)	1.00	
		Saturation between 2-4'	0.86	
520:				
Esquon clay----------	60	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability .6-2"/h
		Shrink-swell (LEP >6)	1.00	Depth to pan 20 to 6
		Saturation between 2-4'	0.86	
Neerdobe clay----------	30	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability .6-2"/h
		Saturation < 2' depth	1.00	Depth to pan 20 to 6
		Shrink-swell (LEP >6)	1.00	
521:				
Neerdobe silt loam, overwash------	85	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability > 2"/hr
		Shrink-swell (LEP >6)	1.00	Depth to pan 20 to 6
		Saturation between 2-4'	0.86	
522:				
Clear Lake silty clay loam, overwash----------	80	Limitations		No limitations
		Ponding (any duration)	1.00	
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
523:				
Esquon silty clay loam, overwash--	80	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
525:				
Govstanford loam----------	85	Limitations		Limitations
		Piping	1.00	Permeability > 2"/hr
		Saturation < 2' depth	0.99	
		Thin layer	0.74	
526:				
Govstanford loam, occasionally flooded----------	85	Limitations		Limitations
		Piping	1.00	Permeability > 2"/hr
		Saturation < 2' depth	0.99	
		Thin layer	0.74	
528:				
Neerdobe clay loam----------	90	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
550:				
Dunstone loam, dry----------	60	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Piping	0.77	Permeability .6-2"/hr
				Slopes 2 to 7%
Loafercreek silt loam, dry--------	20	Limitations		Limitations
		Piping	0.96	Permeability > 2"/hr
		Thin layer	0.88	Slopes > 7%
				Depth to bedrock from
551:				
Dunstone loam, dry----------	35	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Piping	0.77	Depth to bedrock < 20
				Permeability .6-2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
551:				
Lomarica loam----------	15	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Thin layer	0.81	Depth to bedrock fro
Argonaut taxadjunct loam----------	15	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Thin layer	0.86	Depth to bedrock fro
		MH or CH Unified and PI <40%	0.50	
552:				
Dunstone gravelly loam----------	45	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 2
				Slopes > 7%
				Permeability .6-2"/h
Loafercreek gravelly loam---------	40	Limitations		Limitations
		Thin layer	0.83	Permeability > 2"/hr
		Piping	0.72	Slopes > 7%
				Depth to bedrock fro
553:				
Dunstone gravelly loam----------	45	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
				Depth to bedrock < 2
				Permeability .6-2"/h
Loafercreek gravelly loam---------	40	Limitations		Limitations
		Thin layer	0.83	Slopes > 7%
		Piping	0.72	Permeability > 2"/hr
				Depth to bedrock fro
554:				
Dunstone gravelly loam----------	45	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
				Depth to bedrock < 2
				Permeability .6-2"/h
Loafercreek gravelly loam---------	40	Limitations		Limitations
		Thin layer	0.83	Slopes > 7%
		Piping	0.72	Permeability > 2"/hr
				Depth to bedrock fro

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
555:				
Dunstone gravelly loam----------	45	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
				Depth to bedrock < 20
				Permeability .6-2"/hr
Loafercreek gravelly loam---------	40	Limitations		Limitations
		Thin layer	0.83	Slopes > 7%
		Piping	0.72	Permeability > 2"/hr
				Depth to bedrock from
556:				
Mounthope loam----------	50	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Depth to bedrock from
				Permeability .6-2"/hr
Hartsmill gravelly loam----------	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.70	Permeability .6-2"/hr
		MH or CH Unified and PI <40%	0.50	
557:				
Mounthope loam----------	50	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Depth to bedrock from
				Permeability .6-2"/hr
Hartsmill gravelly loam----------	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.70	Permeability .6-2"/hr
		MH or CH Unified and PI <40%	0.50	
558:				
Hartsmill gravelly loam----------	55	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.70	Permeability .6-2"/hr
		MH or CH Unified and PI <40%	0.50	
Mounthope loam----------	30	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Depth to bedrock from
				Permeability .6-2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
559:				
Hartsmill gravelly loam----------	55	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.70	Permeability .6-2"/h
		MH or CH Unified and PI <40%	0.50	
Mounthope loam----------	30	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Depth to bedrock fro
				Permeability .6-2"/h
560:				
Hartsmill gravelly loam----------	50	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.70	Permeability .6-2"/h
		MH or CH Unified and PI <40%	0.50	
Mounthope loam----------	30	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Depth to bedrock fro
				Permeability .6-2"/h
561:				
Bigridge loam----------	50	Limitations		Limitations
		Thin layer	0.09	Permeability > 2"/hr
				Slopes > 7%
				Depth to bedrock fro
Minniecreek loam----------	35	Limitations		Limitations
		Thin layer	0.81	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock fro
		Piping	0.01	Permeability .6-2"/h
562:				
Bigridge loam----------	50	Limitations		Limitations
		Thin layer	0.09	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock fro
Minniecreek loam----------	35	Limitations		Limitations
		Thin layer	0.81	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock fro
		Piping	0.01	Permeability .6-2"/h

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
563:				
Bigridge loam	50	Limitations		Limitations
		Thin layer	0.09	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock from
Minniecreek loam	35	Limitations		Limitations
		Thin layer	0.81	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from
		Piping	0.01	Permeability .6-2"/hr
564:				
Bigridge loam	50	Limitations		Limitations
		Thin layer	0.09	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock from
Minniecreek loam	35	Limitations		Limitations
		Thin layer	0.81	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from
		Piping	0.01	Permeability .6-2"/hr
565:				
Dunstone loam, dry	35	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Piping	0.77	Permeability .6-2"/hr
				Slopes 2 to 7%
Argonaut taxadjunct loam	30	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Thin layer	0.86	Depth to bedrock from
		MH or CH Unified and PI <40%	0.50	
Sunnyslope loam	20	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
				Slopes 2 to 7%
566:				
Dunstone loam, dry	45	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Piping	0.77	Permeability .6-2"/hr
				Slopes 2 to 7%

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
566:				
Loafercreek silt loam, dry--------	20	Limitations		Limitations
		Piping	0.96	Permeability > 2"/hr
		Thin layer	0.88	Slopes > 7%
				Depth to bedrock fro
Katskillhill loam-----------------	15	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Depth to bedrock fro
		Thin layer	0.37	
567:				
Dunstone loam, dry----------------	40	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 2
		Piping	0.77	Permeability .6-2"/h
				Slopes 2 to 7%
Loafercreek silt loam, dry--------	25	Limitations		Limitations
		Piping	0.96	Permeability > 2"/hr
		Thin layer	0.88	Slopes > 7%
				Depth to bedrock fro
Argonaut taxadjunct loam----------	20	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Thin layer	0.86	Depth to bedrock fro
		MH or CH Unified and PI <40%	0.50	
577:				
Parkshill coarse sandy loam-------	40	No limitations		Limitations
				Permeability > 2"/hr
				Slopes > 7%
Flanly loam-----------------------	25	Limitations		Limitations
		Thin layer	0.99	Slopes > 7%
				Depth to bedrock fro
				Permeability .6-2"/h
Hurleton gravelly sandy loam------	20	Limitations		Limitations
		Thin layer	0.96	Permeability > 2"/hr
				Slopes > 7%
				Depth to bedrock fro

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
578:				
Flanly loam----------	45	Limitations		Limitations
		Thin layer	0.99	Slopes > 7%
				Depth to bedrock from
				Permeability .6-2"/hr
Swedesflat cobbly fine sandy loam	35	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Fragments (>3") 15-35%	0.01	Slopes > 7%
580:				
Surnuf taxadjunct loam----------	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Permeability .6-2"/hr
Griffgulch very gravelly silt loam	25	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock from
		MH or CH Unified and PI <40%	0.50	
Rock outcrop, metavolcanic--------	20	Not rated		Not rated
581:				
Surnuf taxadjunct loam----------	65	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Permeability .6-2"/hr
Griffgulch very gravelly silt loam	20	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock from
		MH or CH Unified and PI <40%	0.50	
582:				
Surnuf taxadjunct loam----------	50	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Permeability .6-2"/hr
Griffgulch very gravelly silt loam	35	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock from
		MH or CH Unified and PI <40%	0.50	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
583:				
Surnuf taxadjunct loam----------	50	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Permeability .6-2"/h
Griffgulch very gravelly silt loam	35	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock fro
		MH or CH Unified and PI <40%	0.50	
584:				
Flanly loam----------	35	Limitations		Limitations
		Thin layer	0.99	Slopes > 7%
				Depth to bedrock fro
				Permeability .6-2"/h
Swedesflat cobbly fine sandy loam	30	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.01	Depth to bedrock < 2
Rackerby very gravelly sandy loam	25	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
				Depth to bedrock < 2
				Permeability .6-2"/h
585:				
Flanly loam----------	45	Limitations		Limitations
		Thin layer	0.99	Slopes > 7%
				Depth to bedrock fro
				Permeability .6-2"/h
Sommeyflat loam----------	35	Limitations		Limitations
		Piping	0.75	Permeability .6-2"/h
				Slopes 2 to 7%
586:				
Sommeyflat loam----------	45	Limitations		Limitations
		Piping	0.75	Slopes > 7%
				Permeability .6-2"/h
Mounthope loam----------	40	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Depth to bedrock fro
				Permeability .6-2"/h

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
587:				
Sommeyflat loam	35	Limitations		Limitations
		Piping	0.75	Slopes > 7%
				Permeability .6-2"/hr
Mounthope loam	30	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Depth to bedrock from
				Permeability .6-2"/hr
Hurleton gravelly sandy loam	25	Limitations		Limitations
		Thin layer	0.96	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock from
588:				
Ultic Haploxeralfs, thermic, high terrace	95	Limitations		Limitations
		Saturation < 2' depth	1.00	Slopes 2 to 7%
		Thin layer	0.81	Permeability .6-2"/hr
589:				
Ultic Haploxeralfs, thermic, high terrace	95	Limitations		Limitations
		Saturation < 2' depth	1.00	Slopes > 7%
		Thin layer	0.81	Permeability .6-2"/hr
590:				
Vistarobles sandy loam	30	Limitations		Limitations
		Ponding (any duration)	1.00	Permeability > 2"/hr
		Thin layer	1.00	Depth to pan < 20"
		Saturation < 2' depth	1.00	
Redding loam	25	Limitations		Limitations
		Saturation < 2' depth	0.99	Depth to pan 20 to 60
		Thin layer	0.70	Permeability .6-2"/hr
Argonaut taxadjunct loam	20	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Depth to bedrock from
		Thin layer	0.86	Slopes 2 to 7%
		MH or CH Unified and PI <40%	0.50	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
590:				
Haploxererts gravelly silty clay--	15	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to bedrock fro
		Saturation < 2' depth	1.00	Slopes 2 to 7%
		Shrink-swell (LEP >6)	1.00	
603:				
Oroville gravelly fine sandy loam	30	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 6
		Saturation < 2' depth	1.00	Slopes 2 to 7%
		Shrink-swell (LEP >6)	1.00	
Thermalito sandy loam----------	25	Limitations		Limitations
		Saturation < 2' depth	1.00	Depth to pan 20 to 6
		Thin layer	0.83	Slopes 2 to 7%
		Shrink-swell (LEP 3-6)	0.06	
Fernandez sandy loam----------	15	Limitations		No limitations
		Shrink-swell (LEP >6)	1.00	
		Saturation between 2-4'	0.18	
Thompsonflat fine sandy loam------	15	No limitations		Limitations
				Slopes 2 to 7%
605:				
Duric Xerarents fine sandy loam, leveled----------	75	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	
		Saturation < 2' depth	1.00	
Oroville gravelly fine sandy loam	20	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 6
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
606:				
Redtough loam----------	45	Limitations		Limitations
		Thin layer	1.00	Depth to pan < 20"
		Saturation < 2' depth	1.00	Permeability .6-2"/h
		Fragments (>3") 15-35%	0.30	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
606:				
Fallager loam	30	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	
		Saturation < 2' depth	1.00	
Anita, gravelly duripan	15	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	
		Saturation < 2' depth	1.00	
609:				
Anita, gravelly duripan	50	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	
		Saturation < 2' depth	1.00	
Tuscan taxadjunct gravelly clay loam	40	Limitations		Limitations
		Saturation < 2' depth	1.00	Depth to pan 20 to 60
		Shrink-swell (LEP >6)	1.00	
		Thin layer	0.88	
614:				
Doemill gravelly loam	50	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Saturation < 2' depth	1.00	Permeability .6-2"/hr
		Piping	0.86	
Jokerst very cobbly loam	40	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to bedrock < 20
		Thin layer	1.00	
		Saturation < 2' depth	1.00	
615:				
Doemill gravelly loam	50	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Saturation < 2' depth	1.00	Permeability .6-2"/hr
		Piping	0.86	Slopes 2 to 7%
Jokerst very cobbly loam	40	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to bedrock < 20
		Thin layer	1.00	Slopes 2 to 7%
		Saturation < 2' depth	1.00	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
616:				
Jokerst very cobbly loam----------	35	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 2
		Saturation < 2' depth	1.00	Slopes > 7%
		Piping	0.98	
Doemill gravelly loam----------	35	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 2
		Saturation < 2' depth	1.00	Slopes > 7%
		Piping	0.86	Permeability .6-2"/h
Typic Haploxeralfs gravelly loam--	15	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.78	Slopes > 7%
		Fragments (>3") 15-35%	0.13	
617:				
Doemill gravelly loam----------	35	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Saturation < 2' depth	1.00	Depth to bedrock < 2
		Piping	0.86	Permeability .6-2"/h
Jokerst very cobbly loam----------	30	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Saturation < 2' depth	1.00	Depth to bedrock < 2
		Piping	0.98	
Typic Haploxeralfs gravelly loam--	20	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.78	Slopes > 7%
		Fragments (>3") 15-35%	0.13	
619:				
Carhart taxadjunct clay----------	90	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to bedrock < 2
		Thin layer	1.00	
		Saturation < 2' depth	1.00	
620:				
Doemill gravelly loam----------	40	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 2
		Saturation < 2' depth	1.00	Permeability .6-2"/h
		Piping	0.86	Slopes 2 to 7%

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
620:				
Jokerst very cobbly loam----------	25	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to bedrock < 20
		Thin layer	1.00	Slopes 2 to 7%
		Saturation < 2' depth	1.00	
Ultic Haploxeralfs, thermic, gravelly loam----------	20	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Depth to bedrock from
		Saturation between 2-4'	0.89	Slopes 2 to 7%
		Thin layer	0.83	
621:				
Doemill gravelly loam----------	30	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Saturation < 2' depth	1.00	Slopes > 7%
		Piping	0.86	Permeability .6-2"/hr
Jokerst very cobbly loam----------	30	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Saturation < 2' depth	1.00	Slopes > 7%
		Piping	0.98	
Ultic Haploxeralfs, thermic, gravelly loam----------	20	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Saturation between 2-4'	0.86	Depth to bedrock from
		Thin layer	0.83	
622:				
Xerorthents, shallow----------	40	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Shrink-swell (LEP >6)	1.00	Depth to bedrock < 20
		Fragments (>3") 15-35%	0.13	
Typic Haploxeralfs gravelly loam--	30	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.78	Slopes > 7%
		Thin layer	0.46	Depth to bedrock from
		Fragments (>3") 15-35%	0.13	
Rock outcrop, mudflow-breccia cliffs----------	15	Not rated		Not rated

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
623:				
Xerorthents, shallow	40	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Shrink-swell (LEP >6)	1.00	Depth to bedrock < 2
		Fragments (>3") 15-35%	0.13	
Typic Haploxeralfs gravelly loam--	25	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.78	Slopes > 7%
		Thin layer	0.46	Depth to bedrock fro
		Fragments (>3") 15-35%	0.13	
Rock outcrop, mudflow-breccia cliffs	20	Not rated		Not rated
624:				
Ultic Haploxeralfs, mesic, gravelly loam	60	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Depth to bedrock fro
		Piping	0.69	Slopes 2 to 7%
		Shrink-swell (LEP 3-6)	0.50	
Rockstripe very gravelly loam-----	25	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 2
		Fragments (>3") 15-35%	0.60	Slopes 2 to 7%
		Piping	0.40	
625:				
Ultic Haploxeralfs, mesic, gravelly loam	50	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Piping	0.69	Depth to bedrock fro
		Shrink-swell (LEP 3-6)	0.50	
Rockstripe very gravelly loam-----	35	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.60	Depth to bedrock < 2
		Piping	0.40	
626:				
Ultic Haploxeralfs gravelly loam--	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Thin layer	0.16	Depth to bedrock fro
				Permeability .6-2"/h

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
626:				
Rockstripe very gravelly loam-----	35	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.60	Depth to bedrock < 20
		Piping	0.40	
Rock outcrop, mudflow-breccia cliffs----------	15	Not rated		Not rated
627:				
Ultic Haploxeralfs gravelly loam--	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Thin layer	0.16	Depth to bedrock from
				Permeability .6-2"/hr
Rockstripe very gravelly loam-----	35	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.60	Depth to bedrock < 20
		Piping	0.40	
Rock outcrop, mudflow-breccia cliffs----------	15	Not rated		Not rated
628:				
Rockstripe very gravelly loam-----	40	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.60	Depth to bedrock < 20
		Piping	0.40	
Ultic Haploxeralfs gravelly loam--	35	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Thin layer	0.16	Depth to bedrock from
				Permeability .6-2"/hr
Rock outcrop, mudflow-breccia cliffs----------	20	Not rated		Not rated
629:				
Slideland gravelly loam----------	80	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
				Permeability .6-2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
630:				
Slideland gravelly loam----------	80	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
				Permeability .6-2"/h
631:				
Slideland gravelly loam----------	80	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
				Permeability .6-2"/h
632:				
Ultic Haploxeralfs, conglomerate, very deep----------	50	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
		Piping	0.19	
		Fragments (>3") 15-35%	0.13	
Ultic Haploxeralfs, conglomerate, moderately deep----------	40	Limitations		Limitations
		Fragments (>3") > 35%	0.99	Depth to bedrock fro
		Thin layer	0.96	Slopes 2 to 7%
		Shrink-swell (LEP 3-6)	0.22	
633:				
Ultic Haploxeralfs, conglomerate, very deep----------	60	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
		Piping	0.19	
		Fragments (>3") 15-35%	0.13	
Ultic Haploxeralfs, conglomerate, moderately deep----------	30	Limitations		Limitations
		Fragments (>3") > 35%	0.99	Slopes > 7%
		Thin layer	0.96	Depth to bedrock fro
		Shrink-swell (LEP 3-6)	0.22	
634:				
Ultic Haploxeralfs, conglomerate, very deep----------	60	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
		Piping	0.19	
		Fragments (>3") 15-35%	0.13	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
634:				
Ultic Haploxeralfs, conglomerate, moderately deep	30	Limitations		Limitations
		Fragments (>3") > 35%	0.99	Slopes > 7%
		Thin layer	0.96	Depth to bedrock from
		Shrink-swell (LEP 3-6)	0.22	
635:				
Ultic Haploxeralfs, conglomerate, very deep	50	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
		Piping	0.20	
		Fragments (>3") 15-35%	0.13	
Ultic Haploxeralfs, conglomerate, moderately deep	40	Limitations		Limitations
		Fragments (>3") > 35%	0.99	Slopes > 7%
		Thin layer	0.96	Depth to bedrock from
		Shrink-swell (LEP 3-6)	0.22	
636:				
Ultic Haploxeralfs, conglomerate, moderately deep	50	Limitations		Limitations
		Fragments (>3") > 35%	0.99	Slopes > 7%
		Thin layer	0.96	Depth to bedrock from
		Shrink-swell (LEP 3-6)	0.22	
Ultic Haploxeralfs, conglomerate, very deep	40	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
		Piping	0.20	
		Fragments (>3") 15-35%	0.13	
637:				
Ultic Haploxeralfs, sandstone	80	No limitations		Limitations
				Slopes > 7%
				Permeability .6-2"/hr
638:				
Ultic Haploxeralfs, sandstone	80	No limitations		Limitations
				Slopes > 7%
				Permeability .6-2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
639:				
Ultic Haploxeralfs, sandstone-----	75	No limitations		Limitations Slopes > 7% Permeability .6-2"/h
640:				
Ultic Haploxeralfs, sandstone-----	75	No limitations		Limitations Slopes > 7% Permeability .6-2"/h
641:				
Ultic Haploxeralfs, sandstone-----	75	No limitations		Limitations Slopes > 7% Permeability .6-2"/h
642:				
Chinacamp gravelly loam-----------	70	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35%	 1.00 0.39	Limitations Slopes 2 to 7%
643:				
Chinacamp gravelly loam-----------	70	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35%	 1.00 0.39	Limitations Slopes > 7%
644:				
Chinacamp gravelly loam-----------	70	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35%	 1.00 0.39	Limitations Slopes > 7%
645:				
Chinacamp gravelly loam-----------	70	Limitations Shrink-swell (LEP >6) Fragments (>3") 15-35%	 1.00 0.39	Limitations Slopes > 7%
646:				
Coalcanyon taxadjunct very gravelly loam---------------------	80	Limitations Fragments (>3") > 35% Shrink-swell (LEP 3-6)	 0.99 0.78	Limitations Slopes 2 to 7% Permeability .6-2"/h

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
647:				
Coalcanyon taxadjunct very gravelly loam	75	Limitations		Limitations
		Fragments (>3") > 35%	0.99	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.78	Permeability .6-2"/hr
648:				
Coalcanyon taxadjunct very gravelly loam	80	Limitations		Limitations
		Fragments (>3") > 35%	0.99	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.78	Permeability .6-2"/hr
649:				
Coalcanyon taxadjunct very gravelly loam	75	Limitations		Limitations
		Fragments (>3") > 35%	0.99	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.78	Permeability .6-2"/hr
650:				
Schott very gravelly loam	65	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes 2 to 7%
		Shrink-swell (LEP 3-6)	0.78	Depth to bedrock from
		Thin layer	0.11	
651:				
Schott very gravelly loam	65	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.78	Depth to bedrock from
		Thin layer	0.11	
652:				
Schott very gravelly loam	65	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.78	Depth to bedrock from
		Thin layer	0.11	
Rock outcrop, mudflow breccia	20	Not rated		Not rated
654:				
Coridge bouldery loam	70	Limitations		Limitations
		Saturation < 2' depth	1.00	Depth to bedrock from
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%
		Thin layer	0.98	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
654:				
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated
655:				
Coridge bouldery loam----------	70	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Saturation < 2' depth	0.99	Depth to bedrock fro
		Thin layer	0.98	
Rock outcrop, Cohasset basalt-----	20	Not rated		Not rated
656:				
Rock outcrop, basalt cliffs-------	40	Not rated		Not rated
Coalcanyon taxadjunct very gravelly loam----------	40	Limitations		Limitations
		Fragments (>3") > 35%	0.99	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.78	Permeability .6-2"/h
657:				
Bonneyridge sandy loam----------	35	Limitations		Limitations
		Seepage	0.50	Permeability > 2"/hr
				Slopes 2 to 7%
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Thin layer	1.00	Permeability > 2"/hr
				Depth to bedrock < 2
				Slopes 2 to 7%
Rock outcrop, quartz diorite------	20	Not rated		Not rated
658:				
Bonneyridge sandy loam----------	35	Limitations		Limitations
		Seepage	0.50	Slopes > 7%
				Permeability > 2"/hr
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock < 2
Rock outcrop, quartz diorite------	25	Not rated		Not rated

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
659:				
Bonneyridge sandy loam----------	35	Limitations		Limitations
		Seepage	0.50	Slopes > 7%
				Permeability > 2"/hr
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock < 20
Rock outcrop, quartz diorite------	25	Not rated		Not rated
660:				
Bonneyridge sandy loam----------	30	Limitations		Limitations
		Seepage	0.50	Slopes > 7%
				Permeability > 2"/hr
Chawanakee gravelly sandy loam----	30	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock < 20
Rock outcrop, quartz diorite------	30	Not rated		Not rated
661:				
Millerridge gravelly sandy clay loam-----------------------------	45	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Depth to bedrock from
		Thin layer	0.94	Slopes 2 to 7%
		Fragments (>3") 15-35%	0.30	
Boxrobber cobbly sandy clay loam--	40	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Shrink-swell (LEP >6)	0.99	Slopes 2 to 7%
		Fragments (>3") 15-35%	0.72	
662:				
Millerridge gravelly sandy clay loam-----------------------------	45	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Thin layer	0.94	Depth to bedrock from
		Fragments (>3") 15-35%	0.30	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
662:				
Boxrobber cobbly sandy clay loam--	40	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Shrink-swell (LEP >6)	0.99	Depth to bedrock < 2
		Fragments (>3") 15-35%	0.72	
663:				
Millerridge gravelly sandy clay loam----------	45	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Thin layer	0.94	Depth to bedrock fro
		Fragments (>3") 15-35%	0.30	
Boxrobber cobbly sandy clay loam--	40	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Shrink-swell (LEP >6)	0.99	Depth to bedrock < 2
		Fragments (>3") 15-35%	0.72	
664:				
Millerridge gravelly sandy clay loam----------	45	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Thin layer	0.94	Depth to bedrock fro
		Fragments (>3") 15-35%	0.30	
Boxrobber cobbly sandy clay loam--	40	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Shrink-swell (LEP >6)	0.99	Depth to bedrock < 2
		Fragments (>3") 15-35%	0.72	
665:				
Surnuf gravelly loam----------	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Bigridge loam----------	40	Limitations		Limitations
		Thin layer	0.09	Permeability > 2"/hr
				Slopes > 7%
				Depth to bedrock fro

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
666:				
Surnuf gravelly loam	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Bigridge loam	40	Limitations		Limitations
		Thin layer	0.09	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock from
667:				
Surnuf gravelly loam	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Bigridge loam	40	Limitations		Limitations
		Thin layer	0.09	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock from
668:				
Surnuf gravelly loam	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Bigridge loam	40	Limitations		Limitations
		Thin layer	0.09	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock from
669:				
Oroshore gravelly loam	35	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.77	Depth to bedrock from
		Thin layer	0.74	
Mounthope loam	25	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Depth to bedrock from
				Permeability .6-2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
669:				
Dunstone gravelly loam----------	20	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
				Slopes > 7%
				Permeability .6-2"/hr
670:				
Oroshore gravelly loam----------	35	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.77	Depth to bedrock from
		Thin layer	0.74	
Mounthope loam----------	25	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Depth to bedrock from
				Permeability .6-2"/hr
Dunstone gravelly loam----------	20	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
				Depth to bedrock < 20
				Permeability .6-2"/hr
671:				
Oroshore gravelly loam----------	35	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.77	Depth to bedrock from
		Thin layer	0.74	
Mounthope loam----------	25	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Depth to bedrock from
				Permeability .6-2"/hr
Dunstone gravelly loam----------	20	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
				Depth to bedrock < 20
				Permeability .6-2"/hr
672:				
Oroshore gravelly loam----------	30	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.77	Depth to bedrock from
		Thin layer	0.74	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
672:				
Mounthope loam	25	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Depth to bedrock from
				Permeability .6-2"/hr
Dunstone gravelly loam	25	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
				Depth to bedrock < 20
				Permeability .6-2"/hr
674:				
Chawanakee gravelly sandy loam	30	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock < 20
Bonneyridge sandy loam	30	Limitations		Limitations
		Seepage	0.50	Slopes > 7%
				Permeability > 2"/hr
Rock outcrop, quartz diorite	30	Not rated		Not rated
675:				
Clearhayes sandy clay loam	70	Limitations		Limitations
		Saturation < 2' depth	1.00	Permeability > 2"/hr
		Seepage	1.00	Depth to bedrock from
		Fragments (>3") 15-35%	0.61	
Hamslough clay	15	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan 20 to 60
		Saturation < 2' depth	1.00	
		Shrink-swell (LEP >6)	1.00	
676:				
Carhart clay	50	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to bedrock from
		Saturation < 2' depth	1.00	Slopes 2 to 7%
		Shrink-swell (LEP >6)	1.00	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
676:				
Anita taxadjunct clay	40	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to bedrock < 2
		Thin layer	1.00	
		Saturation < 2' depth	1.00	
677:				
Tuscan gravelly loam	40	Limitations		Limitations
		Thin layer	1.00	Depth to pan < 20"
		Saturation < 2' depth	1.00	Depth to bedrock fro
		Shrink-swell (LEP >6)	1.00	
Fallager loam	25	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	Depth to bedrock fro
		Saturation < 2' depth	1.00	
Anita, gravelly duripan	15	Limitations		Limitations
		Ponding (any duration)	1.00	Depth to pan < 20"
		Thin layer	1.00	Depth to bedrock fro
		Saturation < 2' depth	1.00	
679:				
Lucksev loam	40	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 2
		Saturation < 2' depth	1.00	Slopes 2 to 7%
		Shrink-swell (LEP >6)	1.00	
Butteside gravelly loam	35	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Depth to bedrock fro
		Thin layer	0.93	Slopes 2 to 7%
		MH or CH Unified and PI <40%	0.50	
Carhart clay	15	Limitations		Limitations
		Saturation < 2' depth	1.00	Depth to bedrock fro
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%
		MH or CH Unified and PI >=40%	1.00	
680:				
Lucksev loam	45	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Shrink-swell (LEP >6)	1.00	Depth to bedrock < 2
		MH or CH Unified and PI <40%	0.50	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
680:				
Butteside gravelly loam----------	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Thin layer	0.93	Depth to bedrock from
		MH or CH Unified and PI <40%	0.50	
683:				
Typic Haploxeralfs, magnesic, low elevation----------	50	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Thin layer	0.86	Depth to bedrock from
		Fragments (>3") 15-35%	0.66	
Earlal very gravelly loam---------	20	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Shrink-swell (LEP >6)	1.00	
Rock outcrop, serpentinite--------	15	Not rated		Not rated
684:				
Typic Haploxeralfs, magnesic, low elevation----------	50	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Thin layer	0.86	Depth to bedrock from
		Fragments (>3") 15-35%	0.66	
Earlal very gravelly loam---------	20	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock < 20
		Shrink-swell (LEP >6)	1.00	
Rock outcrop, serpentinite--------	15	Not rated		Not rated
685:				
Bosquejo taxadjunct, gravelly substratum----------	70	Limitations		No limitations
		Ponding (any duration)	1.00	
		Shrink-swell (LEP >6)	1.00	
		Saturation between 2-4'	0.86	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
686:				
Redsluff taxadjunct clay loam-----	70	Limitations		No limitations
		Shrink-swell (LEP 3-6)	0.50	
		Saturation between 2-4'	0.46	
687:				
Xerorthents, shallow----------	45	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 2
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%
		Fragments (>3") 15-35%	0.13	
Typic Haploxeralfs gravelly loam--	40	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.78	Slopes > 7%
		Thin layer	0.46	Depth to bedrock fro
		Fragments (>3") 15-35%	0.13	
700:				
Retsongulch very gravelly sandy loam----------	40	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Thin layer	0.86	Permeability > 2"/hr
				Depth to bedrock fro
Flumewall gravelly sandy loam-----	25	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock < 2
				Permeability .6-2"/h
701:				
Powellton gravelly loam----------	40	Limitations		Limitations
		Piping	0.66	Slopes > 7%
				Permeability .6-2"/h
Obstruction gravelly sandy loam---	30	No limitations		Limitations
				Slopes > 7%
				Permeability > 2"/hr
702:				
Cerpone gravelly loam----------	50	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
		Thin layer	0.01	Depth to bedrock fro
				Permeability .6-2"/h

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
702:				
Typic Haploxeralfs, magnesic, very gravelly loam	20	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.20	Depth to bedrock from
		Thin layer	0.03	
Earlal very gravelly loam	15	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Shrink-swell (LEP >6)	1.00	
703:				
Cerpone gravelly loam	30	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
		Thin layer	0.01	Depth to bedrock from
				Permeability .6-2"/hr
Typic Haploxeralfs, magnesic, very gravelly loam	30	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.20	Depth to bedrock from
		Thin layer	0.03	
Earlal very gravelly loam	15	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock < 20
		Shrink-swell (LEP >6)	1.00	
Rock outcrop, serpentinite	15	Not rated		Not rated
704:				
Typic Haploxeralfs, magnesic, very gravelly loam	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.20	Depth to bedrock from
		Thin layer	0.03	
Earlal very gravelly loam	20	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock < 20
		Shrink-swell (LEP >6)	1.00	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
704:				
Cerpone gravelly loam	15	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
		Thin layer	0.01	Depth to bedrock fro
				Permeability .6-2"/h
Rock outcrop, serpentinite	15	Not rated		Not rated
705:				
Typic Haploxeralfs, magnesic, very gravelly loam	35	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.20	Depth to bedrock fro
		Thin layer	0.03	
Earlal very gravelly loam	25	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock < 2
		Shrink-swell (LEP >6)	1.00	
Cerpone gravelly loam	15	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
		Thin layer	0.01	Depth to bedrock fro
				Permeability .6-2"/h
Rock outcrop, serpentinite	15	Not rated		Not rated
711:				
Dixmine very gravelly loam	45	Limitations		Limitations
		Fragments (>3") 15-35%	0.61	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Permeability .6-2"/h
		Thin layer	0.04	Depth to bedrock fro
Toadtown loam	40	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
				Permeability .6-2"/h
712:				
Dixmine very gravelly loam	50	Limitations		Limitations
		Fragments (>3") 15-35%	0.61	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Permeability .6-2"/h
		Thin layer	0.04	Depth to bedrock fro

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
712:				
Toadtown loam	40	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
				Permeability .6-2"/hr
713:				
Dixmine very gravelly loam	50	Limitations		Limitations
		Fragments (>3") 15-35%	0.61	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Permeability .6-2"/hr
		Thin layer	0.04	Depth to bedrock from
Toadtown loam	35	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
				Permeability .6-2"/hr
714:				
Dixmine very gravelly loam	50	Limitations		Limitations
		Fragments (>3") 15-35%	0.61	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Permeability .6-2"/hr
		Thin layer	0.04	Depth to bedrock from
Toadtown loam	35	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
				Permeability .6-2"/hr
715:				
Logtrain gravelly loam	40	Limitations		Limitations
		Fragments (>3") 15-35%	0.47	Slopes > 7%
		Thin layer	0.03	Permeability .6-2"/hr
				Depth to bedrock from
Bottlehill very gravelly loam	30	Limitations		Limitations
		Thin layer	0.81	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from
				Permeability .6-2"/hr
Walkermine very gravelly loam	20	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.61	Depth to bedrock < 20

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
716:				
Griffgulch very gravelly silt loam	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock from
		MH or CH Unified and PI <40%	0.50	
Surnuf gravelly loam----------	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
717:				
Griffgulch very gravelly silt loam	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock from
		MH or CH Unified and PI <40%	0.50	
Surnuf gravelly loam----------	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
718:				
Griffgulch very gravelly silt loam	35	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock from
		MH or CH Unified and PI <40%	0.50	
Surnuf gravelly loam----------	35	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Spine taxadjunct very cobbly loam	15	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock < 20
		Shrink-swell (LEP 3-6)	0.50	
719:				
Griffgulch very gravelly silt loam	35	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock from
		MH or CH Unified and PI <40%	0.50	
Surnuf gravelly loam----------	30	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
719:				
Spine taxadjunct very cobbly loam	20	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") > 35%	1.00	Depth to bedrock < 20
		Shrink-swell (LEP 3-6)	0.50	
720:				
Dystroxerepts extremely gravelly loam----------	40	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Thin layer	0.56	Depth to bedrock from
				Permeability .6-2"/hr
Haploxeralfs very gravelly loam---	30	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Shrink-swell (LEP >6)	1.00	Depth to bedrock from
		Thin layer	0.19	
Rock outcrop, metavolcanic--------	15	Not rated		Not rated
721:				
Haploxerands, granitic till, medial sandy loam----------	70	Limitations		Limitations
		Seepage	0.10	Permeability > 2"/hr
		Fragments (>3") 15-35%	0.06	Slopes > 7%
722:				
Haploxerands, granitic till, medial sandy loam----------	70	Limitations		Limitations
		Seepage	0.10	Slopes > 7%
		Fragments (>3") 15-35%	0.06	Permeability > 2"/hr
723:				
Haploxerands, granitic till, medial sandy loam----------	70	Limitations		Limitations
		Seepage	0.10	Slopes > 7%
		Fragments (>3") 15-35%	0.06	Permeability > 2"/hr
724:				
Haploxerands, volcanic till, cobbly medial sandy loam---------	75	Limitations		Limitations
		Fragments (>3") 15-35%	0.15	Permeability > 2"/hr
				Slopes > 7%

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
725:				
Haploxerands, volcanic till, cobbly medial sandy loam---------	75	Limitations Fragments (>3") 15-35%	 0.15	Limitations Slopes > 7% Permeability > 2"/hr
726:				
Haploxerands, volcanic till, cobbly medial sandy loam---------	75	Limitations Fragments (>3") 15-35%	 0.15	Limitations Slopes > 7% Permeability > 2"/hr
727:				
Bonneyridge sandy loam----------	85	Limitations Seepage	 0.50	Limitations Permeability > 2"/hr Slopes 2 to 7%
728:				
Bonneyridge sandy loam----------	85	Limitations Seepage	 0.50	Limitations Slopes > 7% Permeability > 2"/hr
729:				
Bonneyridge sandy loam----------	85	Limitations Seepage	 0.50	Limitations Slopes > 7% Permeability > 2"/hr
730:				
Tusccoll gravelly loam----------	60	Limitations Shrink-swell (LEP >6)	 1.00	Limitations Slopes > 7% Permeability .6-2"/h
Schott very gravelly loam---------	25	Limitations Fragments (>3") > 35% Shrink-swell (LEP 3-6) Thin layer	 1.00 0.78 0.11	Limitations Slopes > 7% Depth to bedrock fro
731:				
Tusccoll gravelly loam----------	50	Limitations Shrink-swell (LEP >6)	 1.00	Limitations Slopes > 7% Permeability .6-2"/h

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
731:				
Schott very gravelly loam---------	35	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.78	Depth to bedrock from
		Thin layer	0.11	
732:				
Bonepile taxadjunct, duripan substratum----------	90	Limitations		Limitations
		Fragments (>3") 15-35%	0.85	Permeability > 2"/hr
		Saturation between 2-4'	0.37	Depth to pan 20 to 60
		Thin layer	0.19	
733:				
Haploxeralfs, terrace, gravelly loam----------	75	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Permeability .6-2"/hr
		Shrink-swell (LEP 3-6)	0.78	
734:				
Haploxerands medial sandy loam----	55	No limitations		Limitations
				Permeability > 2"/hr
				Slopes > 7%
Aquic Xerofluvents peaty very fine sandy loam----------	35	Limitations		Limitations
		Saturation < 2' depth	1.00	Permeability > 2"/hr
				Slopes 2 to 7%
735:				
Fluvaquents, loamy----------	80	Limitations		Limitations
		Saturation < 2' depth	1.00	Permeability > 2"/hr
		Piping	0.90	
801:				
Obstruction gravelly sandy loam---	70	No limitations		Limitations
				Permeability > 2"/hr
				Slopes > 7%

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
802:				
Obskel very gravelly sandy loam---	40	Limitations Thin layer	0.02	Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock fro
Obstruction gravelly sandy loam---	40	No limitations		Limitations Slopes > 7% Permeability > 2"/hr
803:				
Obskel very gravelly sandy loam---	40	Limitations Thin layer	0.02	Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock fro
Obstruction gravelly sandy loam---	40	No limitations		Limitations Slopes > 7% Permeability > 2"/hr
804:				
Obskel very gravelly sandy loam---	35	Limitations Thin layer	0.02	Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock fro
Obstruction gravelly sandy loam---	25	No limitations		Limitations Slopes > 7% Permeability > 2"/hr
Retsongulch very gravelly sandy loam----------	20	Limitations Fragments (>3") > 35% Thin layer	1.00 0.86	Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock fro
805:				
Bottlehill very gravelly loam-----	50	Limitations Thin layer Shrink-swell (LEP 3-6)	0.81 0.50	Limitations Slopes 2 to 7% Depth to bedrock fro Permeability .6-2"/h

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
805:				
Walkermine very gravelly loam-----	20	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 20
		Fragments (>3") 15-35%	0.61	Slopes > 7%
Logtrain gravelly loam----------	20	Limitations		Limitations
		Fragments (>3") 15-35%	0.47	Slopes 2 to 7%
		Thin layer	0.03	Permeability .6-2"/hr
				Depth to bedrock from
806:				
Bottlehill very gravelly loam-----	50	Limitations		Limitations
		Thin layer	0.81	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from
				Permeability .6-2"/hr
Walkermine very gravelly loam-----	20	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.61	Depth to bedrock < 20
Logtrain gravelly loam----------	20	Limitations		Limitations
		Fragments (>3") 15-35%	0.47	Slopes > 7%
		Thin layer	0.03	Permeability .6-2"/hr
				Depth to bedrock from
807:				
Bottlehill very gravelly loam-----	35	Limitations		Limitations
		Thin layer	0.81	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from
				Permeability .6-2"/hr
Logtrain gravelly loam----------	30	Limitations		Limitations
		Fragments (>3") 15-35%	0.47	Slopes > 7%
		Thin layer	0.03	Permeability .6-2"/hr
				Depth to bedrock from
Walkermine very gravelly loam-----	25	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.61	Depth to bedrock < 20

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
808:				
Bottlehill very gravelly loam-----	45	Limitations		Limitations
		Thin layer	0.81	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock fro
				Permeability .6-2"/h
Walkermine very gravelly loam-----	20	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.61	Depth to bedrock < 2
Logtrain gravelly loam----------	20	Limitations		Limitations
		Fragments (>3") 15-35%	0.47	Slopes > 7%
		Thin layer	0.03	Permeability .6-2"/h
				Depth to bedrock fro
809:				
Walkermine very gravelly loam-----	45	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Fragments (>3") 15-35%	0.61	Depth to bedrock < 2
Bottlehill very gravelly loam-----	15	Limitations		Limitations
		Thin layer	0.81	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock fro
				Permeability .6-2"/h
Logtrain gravelly loam----------	15	Limitations		Limitations
		Fragments (>3") 15-35%	0.47	Slopes > 7%
		Thin layer	0.03	Permeability .6-2"/h
				Depth to bedrock fro
Rock outcrop, metavolcanic--------	15	Not rated		Not rated
810:				
Dixmine very gravelly loam--------	35	Limitations		Limitations
		Fragments (>3") 15-35%	0.61	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Permeability .6-2"/h
		Thin layer	0.04	Depth to bedrock fro
Mac gravelly loam-----------------	25	Limitations		Limitations
		Thin layer	0.61	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock fro
				Permeability .6-2"/h

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
810:				
Spine very gravelly loam----------	25	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock < 20
				Permeability .6-2"/hr
811:				
Powellton gravelly loam----------	50	Limitations		Limitations
		Piping	0.66	Slopes > 7%
				Permeability .6-2"/hr
Toadtown loam----------	40	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes 2 to 7%
				Permeability .6-2"/hr
812:				
Powellton gravelly loam----------	50	Limitations		Limitations
		Piping	0.66	Slopes > 7%
				Permeability .6-2"/hr
Toadtown loam----------	40	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
				Permeability .6-2"/hr
813:				
Powellton gravelly loam----------	50	Limitations		Limitations
		Piping	0.66	Slopes > 7%
				Permeability .6-2"/hr
Toadtown loam----------	40	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.50	Slopes > 7%
				Permeability .6-2"/hr
814:				
Mountyana gravelly loam----------	80	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.22	Slopes > 7%
				Permeability .6-2"/hr
815:				
Mountyana gravelly loam----------	80	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.22	Slopes > 7%
				Permeability .6-2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
817:				
Lydon very gravelly medial coarse sandy loam	80	Limitations		Limitations
		Fragments (>3") 15-35%	0.74	Permeability > 2"/hr
		Thin layer	0.71	Depth to bedrock fro
				Slopes 2 to 7%
818:				
Lydon very gravelly medial coarse sandy loam	75	Limitations		Limitations
		Fragments (>3") 15-35%	0.74	Slopes > 7%
		Thin layer	0.71	Permeability > 2"/hr
				Depth to bedrock fro
819:				
Lydon very gravelly medial coarse sandy loam	65	Limitations		Limitations
		Fragments (>3") 15-35%	0.74	Slopes > 7%
		Thin layer	0.71	Permeability > 2"/hr
				Depth to bedrock fro
Rock outcrop, mudflow breccia	20	Not rated		Not rated
820:				
Lydon very gravelly medial coarse sandy loam	60	Limitations		Limitations
		Fragments (>3") 15-35%	0.74	Slopes > 7%
		Thin layer	0.71	Permeability > 2"/hr
				Depth to bedrock fro
Rock outcrop, mudflow breccia	25	Not rated		Not rated
821:				
Lydon very gravelly medial coarse sandy loam	55	Limitations		Limitations
		Fragments (>3") 15-35%	0.74	Slopes > 7%
		Thin layer	0.71	Permeability > 2"/hr
				Depth to bedrock fro
Rock outcrop, mudflow breccia	30	Not rated		Not rated
822:				
Bonepile gravelly medial loam	85	Limitations		Limitations
		Thin layer	0.29	Permeability .6-2"/h
		Fragments (>3") 15-35%	0.01	Slopes 2 to 7%
				Depth to bedrock fro

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
823:				
Bonepile gravelly medial loam-----	85	Limitations		Limitations
		Thin layer	0.29	Slopes > 7%
		Fragments (>3") 15-35%	0.01	Permeability .6-2"/hr
				Depth to bedrock from
824:				
Beecee very gravelly medial loam--	85	No limitations		Limitations
				Slopes > 7%
				Permeability .6-2"/hr
825:				
Beecee very gravelly medial loam--	60	No limitations		Limitations
				Slopes > 7%
				Permeability .6-2"/hr
Lydon very gravelly medial coarse sandy loam----------	20	Limitations		Limitations
		Fragments (>3") 15-35%	0.74	Slopes > 7%
		Thin layer	0.71	Permeability > 2"/hr
				Depth to bedrock from
826:				
Redbone gravelly medial sandy loam	80	Limitations		Limitations
		Thin layer	0.03	Permeability > 2"/hr
				Slopes > 7%
				Depth to bedrock from
827:				
Redbone gravelly medial sandy loam	80	Limitations		Limitations
		Thin layer	0.03	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock from
829:				
Paradiso loam----------	80	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%
		MH or CH Unified and PI <40%	0.50	Permeability .6-2"/hr
830:				
Paradiso loam----------	75	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Permeability .6-2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
831:				
Surnuf gravelly loam	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Bigridge loam	30	Limitations		Limitations
		Thin layer	0.09	Permeability > 2"/hr
				Slopes > 7%
				Depth to bedrock fro
Spine very gravelly loam	15	Limitations		Limitations
		Thin layer	1.00	Depth to bedrock < 2
		Shrink-swell (LEP 3-6)	0.22	Slopes > 7%
				Permeability .6-2"/h
832:				
Surnuf gravelly loam	40	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Bigridge loam	30	Limitations		Limitations
		Thin layer	0.09	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock fro
Spine very gravelly loam	15	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock < 2
				Permeability .6-2"/h
833:				
Surnuf gravelly loam	60	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Bigridge loam	15	Limitations		Limitations
		Thin layer	0.09	Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock fro
Spine very gravelly loam	15	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock < 2
				Permeability .6-2"/h

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
834:				
Hietanen gravelly loam----------	50	Limitations		Limitations
		Piping	0.36	Slopes 2 to 7%
		Thin layer	0.11	Depth to bedrock from
				Permeability .6-2"/hr
Mac gravelly loam----------	30	Limitations		Limitations
		Thin layer	0.61	Slopes 2 to 7%
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock from
				Permeability .6-2"/hr
835:				
Hietanen gravelly loam----------	60	Limitations		Limitations
		Piping	0.36	Slopes > 7%
		Thin layer	0.11	Depth to bedrock from
				Permeability .6-2"/hr
Mac gravelly loam----------	20	Limitations		Limitations
		Thin layer	0.61	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock from
				Permeability .6-2"/hr
836:				
Hietanen gravelly loam----------	50	Limitations		Limitations
		Piping	0.36	Slopes > 7%
		Thin layer	0.11	Depth to bedrock from
				Permeability .6-2"/hr
Mac gravelly loam----------	20	Limitations		Limitations
		Thin layer	0.61	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock from
				Permeability .6-2"/hr
Spine very gravelly loam----------	15	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock < 20
				Permeability .6-2"/hr
837:				
Hietanen gravelly loam----------	35	Limitations		Limitations
		Piping	0.36	Slopes > 7%
		Thin layer	0.11	Depth to bedrock from
				Permeability .6-2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
837:				
Spine very gravelly loam----------	25	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock < 2
				Permeability .6-2"/h
Mac gravelly loam-----------------	20	Limitations		Limitations
		Thin layer	0.61	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock fro
				Permeability .6-2"/h
838:				
Dixmine very gravelly loam--------	35	Limitations		Limitations
		Fragments (>3") 15-35%	0.61	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.06	Permeability .6-2"/h
		Thin layer	0.04	Depth to bedrock fro
Spine very gravelly loam----------	25	Limitations		Limitations
		Thin layer	1.00	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock < 2
				Permeability .6-2"/h
Mac gravelly loam-----------------	25	Limitations		Limitations
		Thin layer	0.61	Slopes > 7%
		Shrink-swell (LEP 3-6)	0.22	Depth to bedrock fro
				Permeability .6-2"/h
839:				
Chawanakee gravelly sandy loam----	55	Limitations		Limitations
		Thin layer	1.00	Permeability > 2"/hr
				Depth to bedrock < 2
				Slopes > 7%
Billscabin gravelly sandy loam----	35	Limitations		Limitations
		Seepage	1.00	Permeability > 2"/hr
				Slopes > 7%
841:				
Billscabin gravelly sandy loam----	50	Limitations		Limitations
		Seepage	1.00	Slopes > 7%
				Permeability > 2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
841:				
Bonneyridge sandy loam----------	35	Limitations Seepage	 0.50	Limitations Slopes > 7% Permeability > 2"/hr
842:				
Billscabin gravelly sandy loam----	60	Limitations Seepage	 1.00	Limitations Slopes > 7% Permeability > 2"/hr
Bonneyridge sandy loam----------	25	Limitations Seepage	 0.50	Limitations Slopes > 7% Permeability > 2"/hr
846:				
Bonneyridge sandy loam----------	60	Limitations Seepage	 0.50	Limitations Permeability > 2"/hr Slopes > 7%
Lewisflat loam----------	20	Limitations Piping	 0.96	Limitations Permeability > 2"/hr Slopes > 7%
847:				
Bonneyridge sandy loam----------	60	Limitations Seepage	 0.50	Limitations Slopes > 7% Permeability > 2"/hr
Lewisflat loam----------	20	Limitations Piping	 0.96	Limitations Slopes > 7% Permeability > 2"/hr
848:				
Bonneyridge sandy loam----------	60	Limitations Seepage	 0.50	Limitations Slopes > 7% Permeability > 2"/hr
Lewisflat loam----------	20	Limitations Piping	 0.96	Limitations Slopes > 7% Permeability > 2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
850:				
Lewisflat loam	85	Limitations		Limitations
		Piping	0.96	Permeability > 2"/hr
				Slopes 2 to 7%
851:				
Lewisflat loam	80	Limitations		Limitations
		Piping	0.96	Slopes > 7%
				Permeability > 2"/hr
852:				
Lewisflat loam	75	Limitations		Limitations
		Piping	0.96	Slopes > 7%
				Permeability > 2"/hr
860:				
Toadtown gravelly loam	60	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Powellton silt loam	20	Limitations		Limitations
		Piping	0.50	Slopes > 7%
				Permeability .6-2"/h
861:				
Toadtown gravelly loam	60	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Powellton silt loam	20	Limitations		Limitations
		Piping	0.50	Slopes > 7%
				Permeability .6-2"/h
862:				
Toadtown gravelly loam	60	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Powellton silt loam	20	Limitations		Limitations
		Piping	0.50	Slopes > 7%
				Permeability .6-2"/h

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
863:				
Toadtown gravelly loam----------	60	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Powellton silt loam----------	20	Limitations		Limitations
		Piping	0.50	Slopes > 7%
				Permeability .6-2"/hr
880:				
Sites taxadjunct gravelly loam----	50	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Jocal taxadjunct gravelly loam----	35	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
				Permeability .6-2"/hr
				Depth to bedrock from
881:				
Sites taxadjunct gravelly loam----	50	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Jocal taxadjunct gravelly loam----	35	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
				Permeability .6-2"/hr
				Depth to bedrock from
882:				
Sites taxadjunct gravelly loam----	50	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	
Jocal taxadjunct gravelly loam----	35	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
				Permeability .6-2"/hr
				Depth to bedrock from
883:				
Sites taxadjunct gravelly loam----	50	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
883:				
Jocal taxadjunct gravelly loam----	40	Limitations		Limitations
		Thin layer	0.06	Slopes > 7%
				Permeability .6-2"/hr
				Depth to bedrock from
885:				
Rogerville silt loam----------	75	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Depth to bedrock from
		Thin layer	0.08	Permeability .6-2"/hr
886:				
Rogerville silt loam----------	80	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Depth to bedrock from
		Thin layer	0.08	Permeability .6-2"/hr
892:				
Rogerville silt loam----------	85	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Depth to bedrock from
		Thin layer	0.08	Permeability .6-2"/hr
893:				
Rogerville silt loam----------	85	Limitations		Limitations
		Shrink-swell (LEP >6)	1.00	Slopes > 7%
		MH or CH Unified and PI <40%	0.50	Depth to bedrock from
		Thin layer	0.08	Permeability .6-2"/hr
902:				
Lava flows, Lovejoy basalt--------	50	Not rated		Not rated
Lumpkin gravelly medial sandy loam	40	Not rated		Limitations
				Depth to bedrock < 20
				Permeability > 2"/hr
				Slopes 2 to 7%
903:				
Mudwash gravelly medial sandy loam	45	No limitations		Limitations
				Permeability > 2"/hr
				Slopes > 7%

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
903:				
Timberisland very gravelly medial sandy loam	25	Not rated		Limitations Permeability > 2"/hr Slopes > 7% Depth to bedrock from
Lavatop gravelly medial fine sandy loam	20	Not rated		Limitations Permeability > 2"/hr Slopes > 7% Depth to bedrock from
904:				
Lava flows, Lovejoy basalt	60	Not rated		Not rated
Lavatop gravelly medial fine sandy loam	20	Not rated		Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock from
905:				
Lava flows, Lovejoy basalt	60	Not rated		Not rated
Lumpkin gravelly medial sandy loam	30	Not rated		Limitations Slopes > 7% Depth to bedrock < 20 Permeability > 2"/hr
906:				
Lava flows, Lovejoy basalt	60	Not rated		Not rated
Lumpkin gravelly medial sandy loam	30	Not rated		Limitations Slopes > 7% Depth to bedrock < 20 Permeability > 2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
911:				
Endoaquolls loam	75	Limitations		Limitations
		Saturation < 2' depth	1.00	Permeability .6-2"/h
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%
		MH or CH Unified and PI <40%	0.50	
923:				
Powderhouse medial sandy loam	45	Not rated		Limitations
				Permeability > 2"/hr
				Slopes > 7%
				Depth to bedrock fro
McNair medial coarse sandy loam	25	No limitations		Limitations
				Permeability > 2"/hr
				Slopes > 7%
				Depth to bedrock fro
Greenwell medial sandy loam	20	Not rated		Limitations
				Permeability > 2"/hr
				Slopes > 7%
				Depth to bedrock fro
924:				
Powderhouse medial sandy loam	45	Not rated		Limitations
				Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock fro
McNair medial coarse sandy loam	25	No limitations		Limitations
				Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock fro
Greenwell medial sandy loam	20	Not rated		Limitations
				Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock fro
925:				
Powderhouse medial sandy loam	45	Not rated		Limitations
				Slopes > 7%
				Permeability > 2"/hr
				Depth to bedrock fro

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
925:				
McNair medial coarse sandy loam---	25	No limitations		Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock from
Greenwell medial sandy loam-------	20	Not rated		Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock from
930:				
Shakeridge gravelly medial coarse sandy loam----------	50	Limitations Organic matter (PT, OL, OH)	 1.00	Limitations Permeability > 2"/hr Slopes > 7%
Timberisland very gravelly medial sandy loam----------	40	Not rated		Limitations Permeability > 2"/hr Slopes > 7% Depth to bedrock from
931:				
Shakeridge gravelly medial coarse sandy loam----------	40	Limitations Organic matter (PT, OL, OH)	 1.00	Limitations Slopes > 7% Permeability > 2"/hr
Mudwash gravelly medial sandy loam	25	No limitations		Limitations Slopes > 7% Permeability > 2"/hr
Timberisland very gravelly medial sandy loam----------	15	Not rated		Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock from

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
932:				
Shakeridge gravelly medial coarse sandy loam	50	Limitations		Limitations
		Organic matter (PT, OL, OH)	1.00	Slopes > 7%
				Permeability > 2"/hr
Mudwash gravelly medial sandy loam	35	No limitations		Limitations
				Slopes > 7%
				Permeability > 2"/hr
933:				
Shakeridge gravelly medial coarse sandy loam	80	Limitations		Limitations
		Organic matter (PT, OL, OH)	1.00	Slopes > 7%
				Permeability > 2"/hr
934:				
Mudwash gravelly medial sandy loam	80	No limitations		Limitations
				Permeability > 2"/hr
				Slopes > 7%
939:				
Fluvaquentic Humaquepts very fine sandy loam	85	Limitations		Limitations
		Saturation < 2' depth	1.00	Permeability > 2"/hr
		Piping	0.58	Slopes 2 to 7%
940:				
Dejonah gravelly loam	50	Limitations		Limitations
		Piping	0.99	Permeability > 2"/hr
				Slopes > 7%
Stagpoint loam	30	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Piping	1.00	Permeability .6-2"/h
941:				
Dejonah gravelly loam	50	Limitations		Limitations
		Piping	0.99	Slopes > 7%
				Permeability > 2"/hr

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
941:				
Stagpoint loam	30	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Piping	1.00	Permeability .6-2"/hr
942:				
Stagpoint loam	50	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Piping	1.00	Permeability .6-2"/hr
Dejonah gravelly loam	30	Limitations		Limitations
		Piping	0.99	Slopes > 7%
				Permeability > 2"/hr
948:				
Stagpoint loam	55	Limitations		Limitations
		Fragments (>3") > 35%	1.00	Slopes > 7%
		Piping	1.00	Permeability .6-2"/hr
Dejonah gravelly loam	35	Limitations		Limitations
		Piping	0.99	Slopes > 7%
				Permeability > 2"/hr
949:				
Rogerville taxadjunct fine sandy loam	80	Limitations		Limitations
		Shrink-swell (LEP 3-6)	0.06	Slopes > 7%
		Thin layer	0.01	Permeability > 2"/hr
				Depth to bedrock from
950:				
Lumpkin taxadjunct very gravelly medial very fine sandy loam	40	Not rated		Limitations
				Depth to bedrock < 20
				Slopes > 7%
Rock outcrop, olivine basalt, andesite, or mudflow	25	Not rated		Not rated
Powderhouse medial sandy loam	20	Not rated		Limitations
				Permeability > 2"/hr
				Slopes > 7%
				Depth to bedrock from

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reser
		Limitations	Value	Limitati
951:				
Lumpkin taxadjunct very gravelly medial very fine sandy loam------	40	Not rated		Limitations Slopes > 7% Depth to bedrock < 2
Rock outcrop, andesite----------	25	Not rated		Not rated
Powderhouse medial sandy loam-----	20	Not rated		Limitations Slopes > 7% Permeability > 2"/hr Depth to bedrock fro
960:				
Surnuf gravelly loam, high elevation----------	85	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	 1.00 0.50	Limitations Slopes 2 to 7%
961:				
Surnuf gravelly loam, high elevation----------	85	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	 1.00 0.50	Limitations Slopes > 7%
962:				
Surnuf gravelly loam, high elevation----------	85	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	 1.00 0.50	Limitations Slopes > 7%
963:				
Surnuf gravelly loam, high elevation----------	85	Limitations Shrink-swell (LEP >6) MH or CH Unified and PI <40%	 1.00 0.50	Limitations Slopes > 7%
990:				
Riverwash, frequently flooded-----	100	Not rated		Not rated

Table 19a.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Embankments, dikes, and levees		Pond reserv
		Limitations	Value	Limitatio
991:				
Xerofluvents sandy loam, frequently flooded	75	Limitations Saturation between 2-4'	0.93	Limitations Permeability > 2"/hr Slopes 2 to 7%
995:				
Pits, gravel	100	Not rated		Not rated
996:				
Dumps, excavated material	100	Not rated		Not rated
997:				
Pits	95	Not rated		Not rated
998:				
Dumps, landfill	100	Not rated		Not rated
999:				
Water	100	Not rated		Not rated
DAM:				
Dam, manmade	100	Not rated		Not rated

The interpretation for embankments, dikes, and levees evaluates the following soil properties at variabl ponding; wetness; depth to a restrictive layer; fragments more than 3 inches in size; salinity (EC); Unified content of organic matter (PT, OL, and OH); Unified classes that are hard to pack (MH and CH); permeability t allowing seepage; piping as determined by Atterberg limits of liquid limit (LL) and plasticity index (PI); so and gypsum content.

The interpretation for pond reservoir areas evaluates the following soil properties at variable depths i depth to hard or soft bedrock, depth to a cemented pan, marly textures, gypsum content, and permeability that allowing seepage.

Table 19b.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Only the soils that are used for the production of commonly grown crops or for livestock grazing are listed. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. The rating is based on the limitation with the highest value. Only the five highest value limitations are listed. There may be more limitations. Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
100:					
Anita	60	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
				AWC < 2" to 40"	1.00
Galt	25	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC from 2 - 6"	0.57	Permeability <.2"/hr	1.00
				Saturation < 24" depth during growing season	1.00
104:					
Bosquejo	85	No limitations		Limitations	
				Permeability <.2"/hr	1.00
105:					
Busacca	85	Limitations		Limitations	
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
108:					
Tuscan	45	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Saturation < 24" depth during growing season	1.00
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00
Igo	20	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Saturation < 24" depth during growing season	1.00
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00
Anita	15	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
				AWC < 2" to 40"	1.00
109:					
Bosquejo	85	No limitations		Limitations	
				Permeability <.2"/hr	1.00
110:					
Bosquejo	90	No limitations		Limitations	
				Permeability <.2"/hr	1.00
118:					
Xerorthents, tailings	80	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	AWC < 2" to 40"	1.00
		AWC < 2" to 40"	1.00	Slopes > 2%	1.00
		Slopes > 2%	1.00	Seepage	1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
118co:					
Clear Lake	90	Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Permeability <.2"/hr	1.00
		SAR from 0.5 - 10 to 40" depth	0.65	Flooding >= frequent in growing season	1.00
				SAR from 0.5 - 10 to 40" depth	0.65
119:					
Xerorthents, tailings	70	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	AWC < 2" to 40"	1.00
		AWC < 2" to 40"	1.00	Seepage	1.00
120:					
Gridley taxadjunct	80	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Permeability <.2"/hr	1.00
				AWC < 2" to 40"	1.00
121:					
Boga	45	Limitations		No limitations	
		Sandy or loamy surface textures	1.00		
Loemstone	40	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Permeability <.2"/hr	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
121su:					
Columbia	80	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Flooding >= frequent in growing season	1.00
		Flooding >= frequent in growing season	1.00	AWC from 2 - 6"	0.80
		AWC from 2 - 6"	0.80		
125:					
Gridley taxadjunct	65	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	Permeability <.2"/hr	1.00
		AWC < 2" to 40"	1.00	AWC < 2" to 40"	1.00
Calcic Haploxerolls	20	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	SAR > 10 to 40" depth	1.00
		SAR > 10 to 40" depth	1.00	EC 4-8 dS/m	0.50
		EC 4-8 dS/m	0.50	AWC from 2 - 6"	0.49
126:					
Liveoak	85	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	AWC from 2 - 6"	0.40
		AWC from 2 - 6"	0.40		
127:					
Gridley taxadjunct	85	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	Permeability <.2"/hr	1.00
		AWC < 2" to 40"	1.00	AWC < 2" to 40"	1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
130:					
Eastbiggs----------	80	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	Saturation < 24" depth during growing season	1.00
		AWC from 2 - 6"	0.72	AWC from 2 - 6"	0.72
133:					
Eastbiggs----------	50	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	Saturation < 24" depth during growing season	1.00
		AWC from 2 - 6"	0.72	AWC from 2 - 6"	0.72
Galt---------------	40	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC from 2 - 6"	0.35	Permeability <.2"/hr	1.00
				Saturation < 24" depth during growing season	1.00
136:					
Duric Xerarents----	35	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
				AWC < 2" to 40"	1.00
Duric Xerarents----	30	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Permeability <.2"/hr	1.00
		AWC from 2 - 6"	0.11	AWC from 2 - 6"	0.11
Eastbiggs----------	25	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC from 2 - 6"	0.50	Saturation < 24" depth during growing season	1.00
				AWC from 2 - 6"	0.50
138su:					
Liveoak------------	85	Limitations		No limitations	
		Permeability >= 1.2"/hr	1.00		
139su:					
Liveoak taxadjunct	45	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Flooding >= frequent in growing season	1.00
		Flooding >= frequent in growing season	1.00		
Galt taxadjunct----	40	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		Flooding >= frequent in growing season	1.00	Saturation < 24" depth during growing season	1.00
		AWC from 2 - 6"	0.99	Flooding >= frequent in growing season	1.00
143su:					
Marcum-------------	45	Limitations		Limitations	
		Bedrock (soft) < 40" depth	0.56	Permeability <.2"/hr	1.00
				Bedrock (soft) < 40" depth	0.56
Gridley------------	40	Limitations		Limitations	
		Bedrock (soft) < 40" depth	0.96	Bedrock (soft) < 40" depth	0.96

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
150:					
Columbia	85	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Sand textures in surface	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
		AWC from 2 - 6"	0.32	AWC from 2 - 6"	0.32
150su:					
Olashes	85	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	AWC from 2 - 6"	0.08
		AWC from 2 - 6"	0.08		
152:					
Gianella	85	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Flooding >= frequent in growing season	1.00
		Flooding >= frequent in growing season	1.00		
153:					
Gianella	85	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Flooding >= frequent in growing season	1.00
		Flooding >= frequent in growing season	1.00	AWC from 2 - 6"	0.86
		AWC from 2 - 6"	0.86		
154:					
Gianella	85	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Flooding >= frequent in growing season	1.00
		Flooding >= frequent in growing season	1.00	AWC from 2 - 6"	0.21
		AWC from 2 - 6"	0.21	Seepage	0.10
158:					
Gianella	85	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	AWC from 2 - 6"	0.16
		AWC from 2 - 6"	0.16	Seepage	0.10
160:					
Gianella	85	Limitations		No limitations	
		Sandy or loamy surface textures	1.00		
		Permeability >= 1.2"/hr	1.00		
161:					
Gianella	90	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	AWC from 2 - 6"	0.16
		AWC from 2 - 6"	0.16	Seepage	0.10
162:					
Gianella	90	Limitations		No limitations	
		Sandy or loamy surface textures	1.00		
		Permeability >= 1.2"/hr	1.00		
163yu:					
Holillipah	85	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Sand textures in surface	1.00
		Permeability >= 1.2"/hr	1.00	WEG = 1 or 2	1.00
		Flooding >= frequent in growing season	1.00	AWC < 2" to 40"	1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
175:					
Farwell	85	Limitations		Limitations	
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
176:					
Farwell	85	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	SAR from 0.5 - 10 to 40" depth	0.01
		Permeability >= 1.2"/hr	1.00		
		SAR from 0.5 - 10 to 40" depth	0.01		
177:					
Farwell	85	Limitations		Limitations	
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
178:					
Arbuckle	87	Limitations		No limitations	
		Sandy or loamy surface textures	1.00		
		Permeability >= 1.2"/hr	1.00		
179:					
Moda taxadjunct	65	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	AWC < 2" to 40"	1.00
		Permeability >= 1.2"/hr	1.00	Saturation < 24" depth during growing season	1.00
Arbuckle	20	Limitations		No limitations	
		Sandy or loamy surface textures	1.00		
		Permeability >= 1.2"/hr	1.00		
180:					
Dodgeland	85	No limitations		Limitations	
				Permeability <.2"/hr	1.00
				Saturation < 24" depth during growing season	1.00
181:					
Dodgeland	80	Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Permeability <.2"/hr	1.00
				Saturation < 24" depth during growing season	1.00
				Flooding >= frequent in growing season	1.00
189:					
Esquon	90	No limitations		Limitations	
				Permeability <.2"/hr	1.00
200:					
Parrott	85	Limitations		Limitations	
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
201:					
Parrott	85	Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
203:					
Kusalslough	85	No limitations		Limitations	
				Permeability <.2"/hr	1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
205:					
Parrott	50	Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
Vermet	35	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Saturation < 24" depth during growing season	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
220:					
Esquon	60	Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Permeability <.2"/hr	1.00
		AWC from 2 - 6"	0.05	Flooding >= frequent in growing season	1.00
				Saturation between 24-36" during growing season	0.47
Clear Lake	30	Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Permeability <.2"/hr	1.00
				Saturation < 24" depth during growing season	1.00
				Flooding >= frequent in growing season	1.00
248yu:					
Trainer	85	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	AWC from 2 - 6"	0.21
		Permeability >= 1.2"/hr	1.00		
		AWC from 2 - 6"	0.21		
250:					
Llanoseco	90	No limitations		Limitations	
				Permeability <.2"/hr	1.00
252:					
Whitecabin	60	Limitations		Limitations	
		SAR from 0.5 - 10 to 40" depth	0.98	Permeability <.2"/hr	1.00
				SAR from 0.5 - 10 to 40" depth	0.98
Ordferry	25	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		SAR from 0.5 - 10 to 40" depth	0.91	Permeability <.2"/hr	1.00
		AWC from 2 - 6"	0.80	SAR from 0.5 - 10 to 40" depth	0.91
255:					
Whitecabin	60	Limitations		Limitations	
		SAR from 0.5 - 10 to 40" depth	0.98	Permeability <.2"/hr	1.00
				SAR from 0.5 - 10 to 40" depth	0.98
Ordferry	30	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		SAR from 0.5 - 10 to 40" depth	0.91	Permeability <.2"/hr	1.00
		AWC from 2 - 6"	0.80	SAR from 0.5 - 10 to 40" depth	0.91
256:					
Whitecabin	85	Limitations		Limitations	
		SAR from 0.5 - 10 to 40" depth	0.98	Permeability <.2"/hr	1.00
				SAR from 0.5 - 10 to 40" depth	0.98

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
257:					
Llanoseco	90	Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Permeability <.2"/hr	1.00
				Flooding >= frequent in growing season	1.00
258:					
Codora	85	No limitations		No limitations	
260:					
Ordferry	90	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		SAR from 0.5 - 10 to 40" depth	0.91	Permeability <.2"/hr	1.00
		AWC from 2 - 6"	0.80	SAR from 0.5 - 10 to 40" depth	0.91
280:					
Columbia taxadjunct	80	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Saturation < 24" depth during growing season	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
		AWC from 2 - 6"	0.06	AWC from 2 - 6"	0.06
290:					
Perkins	90	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	AWC from 2 - 6"	0.88
		Permeability >= 1.2"/hr	1.00		
		AWC from 2 - 6"	0.88		
300:					
Redsluff	80	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Seepage	1.00
		Permeability >= 1.2"/hr	1.00	AWC from 2 - 6"	0.45
		AWC from 2 - 6"	0.45		
301:					
Wafap	70	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Permeability <.2"/hr	1.00
		AWC < 2" to 40"	1.00	Fragments (>3") > 10%	1.00
				AWC < 2" to 40"	1.00
Hamslough	15	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Permeability <.2"/hr	1.00
				AWC < 2" to 40"	1.00
302:					
Redtough	50	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Saturation < 24" depth during growing season	1.00
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00
Redswale	35	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Saturation < 24" depth during growing season	1.00
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
303:					
Munjar	60	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Fragments (>3") > 10%	1.00
		Permeability >= 1.2"/hr	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00
Tuscan taxadjunct	20	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	AWC < 2" to 40"	1.00
				Saturation < 24" depth during growing season	1.00
Galt	10	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC from 2 - 6"	0.57	Permeability <.2"/hr	1.00
				Saturation < 24" depth during growing season	1.00
304:					
Redtough	80	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	AWC < 2" to 40"	1.00
		Depth to pan <40"	1.00	Slopes > 2%	1.00
305:					
Redtough	45	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Saturation < 24" depth during growing season	1.00
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00
Redswale	25	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Saturation < 24" depth during growing season	1.00
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00
Anita	20	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
				AWC < 2" to 40"	1.00
306:					
Duric Xerarents	50	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Saturation < 24" depth during growing season	1.00
		AWC from 2 - 6"	0.08	AWC from 2 - 6"	0.08
Duric Xerarents	40	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00
				Saturation < 24" depth during growing season	1.00
307:					
Duric Xerarents	70	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00
				Saturation < 24" depth during growing season	1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
310:					
Kimball----------	85	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	AWC < 2" to 40"	1.00
		AWC < 2" to 40"	1.00		
		Permeability >= 1.2"/hr	1.00		
317:					
Thompsonflat-------	75	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Permeability <.2"/hr	1.00
		Permeability >= 1.2"/hr	1.00	Fragments (>3") > 10%	1.00
		Slopes > 2%	1.00	Slopes > 2%	1.00
318:					
Thompsonflat-------	50	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Permeability <.2"/hr	1.00
		AWC < 2" to 40"	1.00	Fragments (>3") > 10%	1.00
		Slopes > 2%	1.00	AWC < 2" to 40"	1.00
Oroville-----------	40	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Permeability >= 1.2"/hr	1.00	AWC < 2" to 40"	1.00
		Depth to pan <40"	1.00	Permeability <.2"/hr	1.00
320:					
Vistarobles--------	50	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
				AWC < 2" to 40"	1.00
Redding------------	40	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	Saturation between 24-36" during growing season	0.30
		AWC from 2 - 6"	0.26	AWC from 2 - 6"	0.26
321:					
Durixeralfs--------	50	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00
		AWC < 2" to 40"	1.00	Saturation between 24-36" during growing season	0.97
Durixeralfs--------	20	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		Bedrock (soft) < 40" depth	0.99	AWC < 2" to 40"	1.00
Typic Petraquepts--	15	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		Bedrock (soft) < 40" depth	0.99	AWC < 2" to 40"	1.00
330:					
Wilsoncreek--------	60	Limitations		No limitations	
		Sandy or loamy surface textures	1.00		
		Permeability >= 1.2"/hr	1.00		

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
330:					
Trainer	25	Limitations		No limitations	
		Sandy or loamy surface textures	1.00		
		Permeability >= 1.2"/hr	1.00		
331:					
Thompsonflat	85	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Slopes > 2%	1.00
		Permeability >= 1.2"/hr	1.00	Permeability <.2"/hr	1.00
		Slopes > 2%	1.00	Fragments (>3") > 10%	1.00
335:					
Galt	85	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC from 2 - 6"	0.35	Permeability <.2"/hr	1.00
				Saturation < 24" depth during growing season	1.00
336:					
Galt	90	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC from 2 - 6"	0.57	Permeability <.2"/hr	1.00
				Saturation < 24" depth during growing season	1.00
337:					
Galt	85	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC from 2 - 6"	0.35	Permeability <.2"/hr	1.00
				Saturation < 24" depth during growing season	1.00
338:					
Oxyaquic Xerofluvents	90	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	AWC from 2 - 6"	0.58
		AWC from 2 - 6"	0.58	Seepage	0.50
339:					
Oxyaquic Xerofluvents	90	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Flooding >= frequent in growing season	1.00
		Flooding >= frequent in growing season	1.00	AWC from 2 - 6"	0.81
		AWC from 2 - 6"	0.81	Seepage	0.50
360:					
Typic Xerofluvents	45	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Sand textures in surface	1.00
		AWC < 2" to 40"	1.00	WEG = 1 or 2	1.00
				AWC < 2" to 40"	1.00
Typic Xerofluvents	40	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Sand textures in surface	1.00
		Permeability >= 1.2"/hr	1.00	WEG = 1 or 2	1.00
				AWC < 2" to 40"	1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
375:					
Wickscorner--------	80	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Slopes > 2%	1.00
		Permeability >= 1.2"/hr	1.00	AWC from 2 - 6"	0.41
		Slopes > 2%	1.00		
376:					
Flagcanyon---------	50	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00
		AWC < 2" to 40"	1.00	Fragments (>3") > 10%	1.00
Wickscorner--------	35	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Slopes > 2%	1.00
		Permeability >= 1.2"/hr	1.00	AWC from 2 - 6"	0.41
		Slopes > 2%	1.00		
377:					
Flagcanyon taxadjunct--------	55	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	Permeability <.2"/hr	1.00
		AWC < 2" to 40"	1.00	AWC < 2" to 40"	1.00
Durixeralfs--------	20	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Saturation < 24" depth during growing season	1.00
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Permeability >= 1.2"/hr	1.00	AWC < 2" to 40"	1.00
Duraquerts---------	15	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00
				Permeability <.2"/hr	1.00
400:					
Subaco taxadjunct--	85	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		SAR > 10 to 40" depth	1.00	Permeability <.2"/hr	1.00
		AWC from 2 - 6"	0.33	SAR > 10 to 40" depth	1.00
415:					
Ignord----------	90	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	AWC from 2 - 6"	0.43
		AWC from 2 - 6"	0.43		
416:					
Calcic Haploxerolls	90	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	SAR > 10 to 40" depth	1.00
		SAR > 10 to 40" depth	1.00	EC 4-8 dS/m	0.50
		EC 4-8 dS/m	0.50	AWC from 2 - 6"	0.49
418:					
Almendra----------	85	Limitations		No limitations	
		Sandy or loamy surface textures	1.00		
419:					
Conejo----------	85	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	SAR from 0.5 - 10 to 40" depth	0.01
		SAR from 0.5 - 10 to 40" depth	0.01		

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
420:					
Conejo	85	Limitations		Limitations	
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
425:					
Vina	85	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	AWC from 2 - 6"	0.53
		AWC from 2 - 6"	0.53	Seepage	0.10
426:					
Vina	85	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	AWC from 2 - 6"	0.07
		Permeability >= 1.2"/hr	0.99		
		AWC from 2 - 6"	0.07		
439:					
Oxyaquic Xerofluvents	85	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Permeability <.2"/hr	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	Saturation between 24-36" during growing season	0.03
440:					
Oxyaquic Xerofluvents	80	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Flooding >= frequent in growing season	1.00
		Flooding >= frequent in growing season	1.00	AWC from 2 - 6"	0.38
		AWC from 2 - 6"	0.38		
441:					
Oxyaquic Xerofluvents	90	Limitations		No limitations	
		Permeability >= 1.2"/hr	1.00		
442:					
Durixerolls	55	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
				Permeability <.2"/hr	1.00
				Saturation between 24-36" during growing season	0.97
Haploxerolls	30	No limitations		No limitations	
443:					
Durixerolls	60	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Depth to pan <40"	1.00
		Permeability >= 1.2"/hr	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	AWC from 2 - 6"	0.73
Haploxerolls	25	Limitations		No limitations	
		Sandy or loamy surface textures	1.00		
445:					
Chico	85	Limitations		No limitations	
		Sandy or loamy surface textures	1.00		

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
447:					
Charger	80	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	AWC from 2 - 6"	0.54
		AWC from 2 - 6"	0.54	Seepage	0.10
448:					
Haploxerolls	75	No limitations		No limitations	
449:					
Haploxerolls	75	Limitations		No limitations	
		Sandy or loamy surface textures	1.00		
500:					
Lofgren	45	Limitations		Limitations	
		AWC from 2 - 6"	0.19	Permeability <.2"/hr	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	Saturation between 24-36" during growing season	0.30
				AWC from 2 - 6"	0.19
Blavo	40	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC from 2 - 6"	0.33	Permeability <.2"/hr	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	Saturation between 24-36" during growing season	0.47
501:					
Lofgren	45	Limitations		Limitations	
		AWC from 2 - 6"	0.20	Permeability <.2"/hr	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	Saturation between 24-36" during growing season	0.30
				AWC from 2 - 6"	0.20
Blavo	40	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC from 2 - 6"	0.32	Permeability <.2"/hr	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	Saturation between 24-36" during growing season	0.47
502:					
Blavo	80	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC from 2 - 6"	0.27	Permeability <.2"/hr	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	Saturation between 24-36" during growing season	0.47
519:					
Edjobe	85	No limitations		Limitations	
				Permeability <.2"/hr	1.00
520:					
Esquon	60	No limitations		Limitations	
				Permeability <.2"/hr	1.00
Neerdobe	30	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC from 2 - 6"	0.04	Permeability <.2"/hr	1.00
				Saturation between 24-36" during growing season	0.80

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
521:					
Neerdobe	85	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Permeability <.2"/hr	1.00
522:					
Clear Lake	80	Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Permeability <.2"/hr	1.00
				Saturation < 24" depth during growing season	1.00
				Flooding >= frequent in growing season	1.00
523:					
Esquon	80	Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Permeability <.2"/hr	1.00
				Saturation < 24" depth during growing season	1.00
				Flooding >= frequent in growing season	1.00
525:					
Govstanford	85	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	AWC from 2 - 6"	0.21
		Permeability >= 1.2"/hr	0.99		
		AWC from 2 - 6"	0.21		
526:					
Govstanford	85	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	AWC from 2 - 6"	0.21
		Permeability >= 1.2"/hr	0.99		
		AWC from 2 - 6"	0.21		
528:					
Neerdobe	90	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC from 2 - 6"	0.88	Permeability <.2"/hr	1.00
				Saturation < 24" depth during growing season	1.00
590:					
Vistarobles	30	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
				AWC < 2" to 40"	1.00
Redding	25	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	Saturation between 24-36" during growing season	0.30
		AWC from 2 - 6"	0.26	AWC from 2 - 6"	0.26
Argonaut taxadjunct	20	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Bedrock (soft) < 40" depth	1.00
		Bedrock (soft) < 40" depth	1.00	Permeability <.2"/hr	1.00
		Slopes > 2%	1.00	Slopes > 2%	1.00
Haploxererts	15	Limitations		Limitations	
		Slopes > 2%	1.00	Permeability <.2"/hr	1.00
		Bedrock (soft) < 40" depth	0.74	Slopes > 2%	1.00
		AWC from 2 - 6"	0.52	Bedrock (soft) < 40" depth	0.74

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
603:					
Oroville	30	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Permeability >= 1.2"/hr	1.00	AWC < 2" to 40"	1.00
		Depth to pan <40"	1.00	Permeability <.2"/hr	1.00
Thermalito	25	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	Permeability <.2"/hr	1.00
		AWC < 2" to 40"	1.00	AWC < 2" to 40"	1.00
Fernandez	15	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Permeability <.2"/hr	1.00
		AWC from 2 - 6"	0.03	AWC from 2 - 6"	0.03
Thompsonflat	15	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Permeability <.2"/hr	1.00
		AWC < 2" to 40"	1.00	Fragments (>3") > 10%	1.00
		Slopes > 2%	1.00	AWC < 2" to 40"	1.00
605:					
Duric Xerarents	75	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00
				Saturation < 24" depth during growing season	1.00
Oroville	20	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Permeability >= 1.2"/hr	1.00	AWC < 2" to 40"	1.00
		Depth to pan <40"	1.00	Permeability <.2"/hr	1.00
606:					
Redtough	45	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Saturation < 24" depth during growing season	1.00
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00
Fallager	30	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Saturation < 24" depth during growing season	1.00
		AWC < 2" to 40"	1.00	Depth to pan <40"	1.00
		Depth to pan <40"	1.00	AWC < 2" to 40"	1.00
Anita	15	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
				AWC < 2" to 40"	1.00
609:					
Anita	50	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
				AWC < 2" to 40"	1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
609:					
Tuscan taxadjunct--	40	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	AWC < 2" to 40"	1.00
				Saturation < 24" depth during growing season	1.00
675:					
Clearhayes---------	70	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Permeability <.2"/hr	1.00
		Bedrock (soft) < 40" depth	0.26	Seepage	1.00
				Fragments (>3") > 10%	1.00
Hamslough----------	15	Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Permeability <.2"/hr	1.00
				AWC < 2" to 40"	1.00
677:					
Tuscan----------	40	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Saturation < 24" depth during growing season	1.00
		AWC < 2" to 40"	1.00		
		Bedrock (soft) < 40" depth	1.00	Bedrock (soft) < 40" depth	1.00
				Depth to pan <40"	1.00
Fallager----------	25	Limitations		Limitations	
		Sandy or loamy surface textures	1.00	Saturation < 24" depth during growing season	1.00
		AWC < 2" to 40"	1.00		
		Bedrock (soft) < 40" depth	1.00	Bedrock (soft) < 40" depth	1.00
				Depth to pan <40"	1.00
Anita----------	15	Limitations		Limitations	
		AWC < 2" to 40"	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00		
		Bedrock (soft) < 40" depth	0.87	Depth to pan <40"	1.00
				AWC < 2" to 40"	1.00
685:					
Bosquejo taxadjunct	70	Limitations		Limitations	
		AWC from 2 - 6"	0.59	Permeability <.2"/hr	1.00
				AWC from 2 - 6"	0.59
686:					
Redsluff taxadjunct	70	No limitations		Limitations	
				Permeability <.2"/hr	1.00

Table 19b.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Basin or paddy irrigation		Graded border irrigation	
		Limitations	Value	Limitations	Value
991:					
Xerofluvents-------	75	Limitations		Limitations	
		Permeability >= 1.2"/hr	1.00	Slopes > 2%	1.00
		Slopes > 2%	1.00	AWC from 2 - 6"	0.98
		AWC from 2 - 6"	0.98		

The interpretation for basin or paddy irrigation evaluates the following soil properties at variable depths in the soil: texture of the surface layer; flooding during the growing season; ponding; slope; depth to hard or soft bedrock; depth to a cemented pan; electrical conductivity (EC); sodium content expressed as sodium adsorption ratio (SAR); sulfur content based on taxonomic placement; permeability more than 3cm/hr, allowing seepage; and available water capacity.

The interpretation for graded border irrigation evaluates the following soil properties at variable depths in the soil: a high clay content and smectitic mineralogy; flooding during the growing season; depth to wetness; slope; depth to hard or soft bedrock; depth to a cemented pan; fragments more than 75 mm in size; permeability less than .5 cm/hr, allowing saturated conditions; available water capacity (AWC); electrical conductivity (EC); sodium content expressed as sodium adsorption ratio (SAR); and sulfur content based on taxonomic placement.

Table 19c.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Only the soils that are used for the production of commonly grown crops or for livestock grazing are listed. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. The rating is based on the limitation with the highest value. Only the five highest value limitations are listed. There may be more limitations. Fine-earth fractions and rock fragments are reported on a weight basis. An explanation of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table)

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
100:							
Anita	60	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
Galt	25	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation < 24" depth during growing season	1.00	Depth to pan between 20 and 40"	0.29	Saturation < 24" depth during growing season	1.00
104:							
Bosquejo	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
105:							
Busacca	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
108:							
Tuscan	45	Limitations		Limitations		Limitations	
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
Igo	20	Limitations		Limitations		Limitations	
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
108:							
Anita	15	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
109:							
Bosquejo	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
110:							
Bosquejo	90	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
118co:							
Clear Lake	90	Limitations		Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
		SAR from 0.5 - 10 to 40" depth	0.65	SAR from 0.5 - 10 to 40" depth	0.65	SAR from 0.5 - 10 to 40" depth	0.65
120:							
Gridley taxadjunct--	80	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan <= 20"	0.99	AWC < 2" to 40"	1.00
121:							
Boga	45	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
Loemstone	40	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
121su:							
Columbia	80	Limitations		Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
		AWC from 2 - 6"	0.80			AWC from 2 - 6"	0.80

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
125:							
Gridley taxadjunct--	65	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.97	AWC < 2" to 40"	1.00
Calcic Haploxerolls	20	Limitations		Limitations		Limitations	
		SAR > 10 to 40" depth	1.00	SAR > 10 to 40" depth	1.00	SAR > 10 to 40" depth	1.00
		EC 4-8 dS/m	0.50	EC 4-8 dS/m	0.50	EC 4-8 dS/m	0.50
		AWC from 2 - 6"	0.49			AWC from 2 - 6"	0.49
126:							
Liveoak----------	85	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.40			AWC from 2 - 6"	0.40
127:							
Gridley taxadjunct--	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.97	AWC < 2" to 40"	1.00
130:							
Eastbiggs----------	80	Limitations		Limitations		Limitations	
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation < 24" depth during growing season	1.00	Depth to pan between 20 and 40"	0.71	Saturation < 24" depth during growing season	1.00
		AWC from 2 - 6"	0.72			AWC from 2 - 6"	0.72
133:							
Eastbiggs----------	50	Limitations		Limitations		Limitations	
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation < 24" depth during growing season	1.00	Depth to pan between 20 and 40"	0.71	Saturation < 24" depth during growing season	1.00
		AWC from 2 - 6"	0.72			AWC from 2 - 6"	0.72
Galt----------	40	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation < 24" depth during growing season	1.00	Depth to pan between 20 and 40"	0.46	Saturation < 24" depth during growing season	1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
136:							
Duric Xerarents-----	35	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
Duric Xerarents-----	30	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		AWC from 2 - 6"	0.11			AWC from 2 - 6"	0.11
Eastbiggs-----------	25	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation < 24" depth during growing season	1.00	Depth to pan between 20 and 40"	0.46	Saturation < 24" depth during growing season	1.00
138su:							
Liveoak-------------	85	No limitations		No limitations		No limitations	
139su:							
Liveoak taxadjunct--	45	Limitations		Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
Galt taxadjunct-----	40	Limitations		Limitations		Limitations	
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation < 24" depth during growing season	1.00	Flooding >= frequent in growing season	1.00	Saturation < 24" depth during growing season	1.00
		Flooding >= frequent in growing season	1.00	Depth to pan <= 20"	0.99	Flooding >= frequent in growing season	1.00
143su:							
Marcum--------------	45	Limitations		No limitations		Limitations	
		Bedrock (soft) < 40" depth	0.56			Bedrock (soft) < 40" depth	0.56
Gridley-------------	40	Limitations		No limitations		Limitations	
		Bedrock (soft) < 40" depth	0.96			Bedrock (soft) < 40" depth	0.96
150:							
Columbia------------	85	Limitations		Limitations		Limitations	
		Lcos, cos, s, or ls in surface	1.00	Flooding >= frequent in growing season	1.00	Sand textures in surface layer	1.00
		Flooding >= frequent in growing season	1.00			Flooding >= frequent in growing season	1.00
		AWC from 2 - 6"	0.32			AWC from 2 - 6"	0.32

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
150su:							
Olashes	85	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.08			AWC from 2 - 6"	0.08
152:							
Gianella	85	Limitations		Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
153:							
Gianella	85	Limitations		Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
		AWC from 2 - 6"	0.86			AWC from 2 - 6"	0.86
154:							
Gianella	85	Limitations		Limitations		Limitations	
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
		AWC from 2 - 6"	0.21			AWC from 2 - 6"	0.21
						Seepage	0.10
158:							
Gianella	85	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.16			AWC from 2 - 6"	0.16
						Seepage	0.10
160:							
Gianella	85	No limitations		No limitations		No limitations	
161:							
Gianella	90	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.16			AWC from 2 - 6"	0.16
						Seepage	0.10
162:							
Gianella	90	No limitations		No limitations		No limitations	
163yu:							
Holillipah	85	Limitations		Limitations		Limitations	
		Lcos, cos, s, or ls in surface	1.00	Flooding >= frequent in growing season	1.00	Sand textures in surface layer	1.00
		WEG = 1 or 2	1.00			WEG = 1 or 2	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
175:							
Farwell	85	Limitations		Limitations		Limitations	
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
176:							
Farwell	85	Limitations		Limitations		Limitations	
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
177:							
Farwell	85	Limitations		Limitations		Limitations	
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
178:							
Arbuckle	87	No limitations		No limitations		No limitations	
179:							
Moda taxadjunct	65	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.97	AWC < 2" to 40"	1.00
Arbuckle	20	No limitations		No limitations		No limitations	
180:							
Dodgeland	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
181:							
Dodgeland	80	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
189:							
Esquon	90	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
200:							
Parrott	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
201:							
Parrott	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
203:							
Kusalslough	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
205:							
Parrott	50	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
Vermet	35	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
220:							
Esquon	60	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Flooding >= frequent in growing season	1.00	Saturation < 2' depth	1.00	Flooding >= frequent in growing season	1.00
		Saturation between 24-36" during growing season	0.47	Flooding >= frequent in growing season	1.00	Saturation between 24-36" during growing season	0.47
Clear Lake	30	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
248yu:							
Trainer	85	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.21			AWC from 2 - 6"	0.21
250:							
Llanoseco	90	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
252:							
Whitecabin----------	60	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		SAR from 0.5 - 10 to 40" depth	0.98	SAR from 0.5 - 10 to 40" depth	0.98	SAR from 0.5 - 10 to 40" depth	0.98
Ordferry----------	25	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		SAR from 0.5 - 10 to 40" depth	0.91	SAR from 0.5 - 10 to 40" depth	0.91	SAR from 0.5 - 10 to 40" depth	0.91
255:							
Whitecabin----------	60	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		SAR from 0.5 - 10 to 40" depth	0.98	SAR from 0.5 - 10 to 40" depth	0.98	SAR from 0.5 - 10 to 40" depth	0.98
Ordferry----------	30	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		SAR from 0.5 - 10 to 40" depth	0.91	SAR from 0.5 - 10 to 40" depth	0.91	SAR from 0.5 - 10 to 40" depth	0.91
256:							
Whitecabin----------	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		SAR from 0.5 - 10 to 40" depth	0.98	SAR from 0.5 - 10 to 40" depth	0.98	SAR from 0.5 - 10 to 40" depth	0.98
257:							
Llanoseco----------	90	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
258:							
Codora----------	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
260:							
Ordferry----------	90	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		SAR from 0.5 - 10 to 40" depth	0.91	SAR from 0.5 - 10 to 40" depth	0.91	SAR from 0.5 - 10 to 40" depth	0.91

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
280:							
Columbia taxadjunct	80	Limitations		Limitations		Limitations	
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
		AWC from 2 - 6"	0.06			AWC from 2 - 6"	0.06
290:							
Perkins----------	90	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.88			AWC from 2 - 6"	0.88
300:							
Redsluff----------	80	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.45			Seepage	1.00
						AWC from 2 - 6"	0.45
301:							
Wafap----------	70	Limitations		Limitations		Limitations	
		AWC < 2" to 40"	1.00	Saturation < 2' depth	1.00	Fragments (>3") > 10%	1.00
		Fragments (>3") > 25%	0.50			AWC < 2" to 40"	1.00
Hamslough----------	15	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.71	AWC < 2" to 40"	1.00
302:							
Redtough----------	50	Limitations		Limitations		Limitations	
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
Redswale----------	35	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
303:							
Munjar----------	60	Limitations		Limitations		Limitations	
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.35	Fragments (>3") > 10%	1.00
		Saturation between 24-36" during growing season	0.97			AWC < 2" to 40"	1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
303:							
Tuscan taxadjunct---	20	Limitations		Limitations		Limitations	
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.54	AWC < 2" to 40"	1.00
		Saturation < 24" depth during growing season	1.00			Saturation < 24" depth during growing season	1.00
Galt---	10	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation < 24" depth during growing season	1.00	Depth to pan between 20 and 40"	0.29	Saturation < 24" depth during growing season	1.00
304:							
Redtough---	80	Limitations		Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Slopes > 15%	1.00			Slopes > 2%	1.00
305:							
Redtough---	45	Limitations		Limitations		Limitations	
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
Redswale---	25	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
Anita---	20	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
307:							
Duric Xerarents---	70	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan <= 20"	1.00	AWC < 2" to 40"	1.00
310:							
Kimball---	85	Limitations		No limitations		Limitations	
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
317:							
Thompsonflat--------	75	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.62			Fragments (>3") > 10%	1.00
						Slopes > 2%	1.00
						AWC from 2 - 6"	0.62
318:							
Thompsonflat--------	50	Limitations		No limitations		Limitations	
		AWC < 2" to 40"	1.00			Fragments (>3") > 10%	1.00
						AWC < 2" to 40"	1.00
						Slopes > 2%	1.00
Oroville------------	40	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.95	AWC < 2" to 40"	1.00
320:							
Vistarobles---------	50	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
Redding-------------	40	Limitations		Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan between 20 and 40"	0.10	Depth to pan <40"	1.00
		Saturation between 24-36" during growing season	0.30			Saturation between 24-36" during growing season	0.30
		AWC from 2 - 6"	0.26			AWC from 2 - 6"	0.26
321:							
Durixeralfs---------	50	Limitations		Limitations		Limitations	
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.71	AWC < 2" to 40"	1.00
		Saturation between 24-36" during growing season	0.97			Saturation between 24-36" during growing season	0.97
Durixeralfs---------	20	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
321:							
Typic Petraquepts---	15	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
330:							
Wilsoncreek---------	60	No limitations		No limitations		No limitations	
Trainer-------------	25	No limitations		No limitations		No limitations	
331:							
Thompsonflat--------	85	Limitations		No limitations		Limitations	
		Slopes > 15%	1.00			Slopes > 2%	1.00
		AWC from 2 - 6"	0.62			Fragments (>3") > 10%	1.00
						AWC from 2 - 6"	0.62
335:							
Galt----------------	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation < 24" depth during growing season	1.00	Depth to pan between 20 and 40"	0.46	Saturation < 24" depth during growing season	1.00
336:							
Galt----------------	90	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation < 24" depth during growing season	1.00	Depth to pan between 20 and 40"	0.29	Saturation < 24" depth during growing season	1.00
337:							
Galt----------------	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation < 24" depth during growing season	1.00	Depth to pan between 20 and 40"	0.46	Saturation < 24" depth during growing season	1.00
338:							
Oxyaquic Xerofluvents-------	90	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		AWC from 2 - 6"	0.58			AWC from 2 - 6"	0.58
						Seepage	0.50

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
339:							
Oxyaquic Xerofluvents-------	90	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
		AWC from 2 - 6"	0.81			AWC from 2 - 6"	0.81
360:							
Typic Xerofluvents--	45	Limitations		No limitations		Limitations	
		Sand textures in surface layer	1.00			Sand textures in surface layer	1.00
		WEG = 1 or 2	1.00			WEG = 1 or 2	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
Typic Xerofluvents--	40	Limitations		No limitations		Limitations	
		Sand textures in surface layer	1.00			Sand textures in surface layer	1.00
		WEG = 1 or 2	1.00			WEG = 1 or 2	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
375:							
Wickscorner---------	80	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.41			Slopes > 2%	1.00
						AWC from 2 - 6"	0.41
376:							
Flagcanyon----------	50	Limitations		Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan between 20 and 40"	0.46	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
		Saturation between 24-36" during growing season	0.63			Fragments (>3") > 10%	1.00
Wickscorner---------	35	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.41			Slopes > 2%	1.00
						AWC from 2 - 6"	0.41
377:							
Flagcanyon taxadjunct---------	55	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.35	AWC < 2" to 40"	1.00
Durixeralfs---------	20	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
377:							
Duraquerts	15	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.95	AWC < 2" to 40"	1.00
400:							
Subaco taxadjunct	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		SAR > 10 to 40" depth	1.00	SAR > 10 to 40" depth	1.00	SAR > 10 to 40" depth	1.00
415:							
Ignord	90	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.43			AWC from 2 - 6"	0.43
416:							
Calcic Haploxerolls	90	Limitations		Limitations		Limitations	
		SAR > 10 to 40" depth	1.00	SAR > 10 to 40" depth	1.00	SAR > 10 to 40" depth	1.00
		EC 4-8 dS/m	0.50	EC 4-8 dS/m	0.50	EC 4-8 dS/m	0.50
		AWC from 2 - 6"	0.49			AWC from 2 - 6"	0.49
418:							
Almendra	85	No limitations		No limitations		No limitations	
419:							
Conejo	85	Limitations		Limitations		Limitations	
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
420:							
Conejo	85	Limitations		Limitations		Limitations	
		SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01	SAR from 0.5 - 10 to 40" depth	0.01
425:							
Vina	85	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.53			AWC from 2 - 6"	0.53
						Seepage	0.10
426:							
Vina	85	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.07			AWC from 2 - 6"	0.07

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
439:							
Oxyaquic Xerofluvents	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Permeability <=.2"/hr and not smectitic mineralogy	1.00	Permeability <=.2"/hr and not smectitic mineralogy	1.00	Permeability <=.2"/hr and not smectitic mineralogy	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
440:							
Oxyaquic Xerofluvents	80	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
		AWC from 2 - 6"	0.38			AWC from 2 - 6"	0.38
441:							
Oxyaquic Xerofluvents	90	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
442:							
Durixerolls	55	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation between 24-36" during growing season	0.97	Depth to pan between 20 and 40"	0.20	Saturation between 24-36" during growing season	0.97
Haploxerolls	30	No limitations		No limitations		No limitations	
443:							
Durixerolls	60	Limitations		Limitations		Limitations	
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation < 24" depth during growing season	1.00	Depth to pan between 20 and 40"	0.80	Saturation < 24" depth during growing season	1.00
		AWC from 2 - 6"	0.73			AWC from 2 - 6"	0.73
Haploxerolls	25	No limitations		No limitations		No limitations	
445:							
Chico	85	No limitations		No limitations		No limitations	
447:							
Charger	80	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.54			AWC from 2 - 6"	0.54
						Seepage	0.10

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
448:							
Haploxerolls	75	No limitations		No limitations		No limitations	
449:							
Haploxerolls	75	No limitations		No limitations		No limitations	
500:							
Lofgren	45	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Clay >= 60% in surface layer	1.00	Saturation < 2' depth	1.00	Saturation between 24-36" during growing season	0.30
		Saturation between 24-36" during growing season	0.30	SAR from 0.5 - 10 to 40" depth	0.01	AWC from 2 - 6"	0.19
Blavo	40	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Clay >= 60% in surface layer	1.00	Depth to pan between 20 and 40"	0.06	Saturation between 24-36" during growing season	0.47
501:							
Lofgren	45	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Clay >= 60% in surface layer	1.00	Saturation < 2' depth	1.00	Saturation between 24-36" during growing season	0.30
		Saturation between 24-36" during growing season	0.30	SAR from 0.5 - 10 to 40" depth	0.01	AWC from 2 - 6"	0.20
Blavo	40	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Clay >= 60% in surface layer	1.00	Depth to pan between 20 and 40"	0.06	Saturation between 24-36" during growing season	0.47
502:							
Blavo	80	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation between 24-36" during growing season	0.47	Depth to pan between 20 and 40"	0.06	Saturation between 24-36" during growing season	0.47
519:							
Edjobe	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
520:							
Esquon	60	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
Neerdobe	30	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation between 24-36" during growing season	0.80	Depth to pan between 20 and 40"	0.01	Saturation between 24-36" during growing season	0.80
521:							
Neerdobe	85	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
522:							
Clear Lake	80	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
523:							
Esquon	80	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00	Flooding >= frequent in growing season	1.00
525:							
Govstanford	85	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.21			AWC from 2 - 6"	0.21
526:							
Govstanford	85	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.21			AWC from 2 - 6"	0.21
528:							
Neerdobe	90	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		Saturation < 24" depth during growing season	1.00	Depth to pan between 20 and 40"	0.86	Saturation < 24" depth during growing season	1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
590:							
Vistarobles---	30	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
Redding---	25	Limitations		Limitations		Limitations	
		Depth to pan <40"	1.00	Depth to pan between 20 and 40"	0.10	Depth to pan <40"	1.00
		Saturation between 24-36" during growing season	0.30			Saturation between 24-36" during growing season	0.30
		AWC from 2 - 6"	0.26			AWC from 2 - 6"	0.26
Argonaut taxadjunct	20	Limitations		No limitations		Limitations	
		Bedrock (soft) < 40" depth	1.00			Bedrock (soft) < 40" depth	1.00
		AWC from 2 - 6"	0.52			Slopes > 2%	1.00
						AWC from 2 - 6"	0.52
Haploxererts---	15	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Bedrock (soft) < 40" depth	0.74	Saturation < 2' depth	1.00	Slopes > 2%	1.00
		AWC from 2 - 6"	0.52			Bedrock (soft) < 40" depth	0.74
603:							
Oroville---	30	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.95	AWC < 2" to 40"	1.00
Thermalito---	25	Limitations		Limitations		Limitations	
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.35	AWC < 2" to 40"	1.00
		Saturation < 24" depth during growing season	1.00			Saturation < 24" depth during growing season	1.00
Fernandez---	15	Limitations		No limitations		Limitations	
		AWC from 2 - 6"	0.03			AWC from 2 - 6"	0.03
Thompsonflat---	15	Limitations		No limitations		Limitations	
		AWC < 2" to 40"	1.00			Fragments (>3") > 10%	1.00
						AWC < 2" to 40"	1.00
						Slopes > 2%	1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
605:							
Duric Xerarents-----	75	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan <= 20"	1.00	AWC < 2" to 40"	1.00
Oroville----------	20	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.95	AWC < 2" to 40"	1.00
606:							
Redtough----------	45	Limitations		Limitations		Limitations	
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00			AWC < 2" to 40"	1.00
Fallager----------	30	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
Anita----------	15	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
609:							
Anita----------	50	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
Tuscan taxadjunct---	40	Limitations		Limitations		Limitations	
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.54	AWC < 2" to 40"	1.00
		Saturation < 24" depth during growing season	1.00			Saturation < 24" depth during growing season	1.00

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
675:							
Clearhayes----------	70	Limitations		Limitations		Limitations	
		AWC < 2" to 40"	1.00	Saturation < 2' depth	1.00	Seepage	1.00
		Fragments (>3") > 25%	0.50			Fragments (>3") > 10%	1.00
		Bedrock (soft) < 40" depth	0.26			AWC < 2" to 40"	1.00
Hamslough----------	15	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Depth to pan <40"	1.00	Saturation < 2' depth	1.00	Depth to pan <40"	1.00
		AWC < 2" to 40"	1.00	Depth to pan between 20 and 40"	0.71	AWC < 2" to 40"	1.00
677:							
Tuscan----------	40	Limitations		Limitations		Limitations	
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Bedrock (soft) < 40" depth	1.00	Depth to pan <= 20"	1.00	Bedrock (soft) < 40" depth	1.00
		Depth to pan <40"	1.00			Depth to pan <40"	1.00
Fallager----------	25	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Bedrock (soft) < 40" depth	1.00	Depth to pan <= 20"	1.00	Bedrock (soft) < 40" depth	1.00
Anita----------	15	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		Saturation < 24" depth during growing season	1.00	Saturation < 2' depth	1.00	Saturation < 24" depth during growing season	1.00
		Depth to pan <40"	1.00	Depth to pan <= 20"	1.00	Depth to pan <40"	1.00
685:							
Bosquejo taxadjunct	70	Limitations		Limitations		Limitations	
		Ponding (any duration)	1.00	Ponding (any duration)	1.00	Ponding (any duration)	1.00
		AWC from 2 - 6"	0.59			AWC from 2 - 6"	0.59

Table 19c.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Sprinkler irrigation		Drip or trickle irrigation		Furrow irrigation	
		Limitations	Value	Limitations	Value	Limitations	Value
686: Redsluff taxadjunct	70	No limitations		No limitations		No limitations	

The interpretation for sprinkler irrigation evaluates the following soil properties at variable depths in the soil: texture of the surface layer; clay content more than 60 percent; flooding during the growing season; ponding; depth to wetness; available water capacity (AWC); slope; depth to hard or soft bedrock; depth to a cemented pan; fragments larger than 75 millimeters; sodium content (SAR); pH; clayey or sandy textures; permeability less than .5 cm/hr, resulting in saturated soil conditions; soil erodibility expressed as a K factor; electrical conductivity (EC); sodium content expressed as sodium adsorption ratio (SAR); and sulfur content based on taxonomic placement.

The interpretation for drip or trickle irrigation evaluates the following soil properties at variable depths in the soil: flooding, ponding, depth to wetness, depth to hard or soft bedrock, depth to a cemented pan, electrical conductivity (EC), sodium content expressed as sodium adsorption ratio (SAR), sulfur content based on taxonomic placement, and permeability less than .5 cm/hr.

The interpretation for furrow irrigation evaluates the following soil properties at variable depths in the soil: texture of the surface layer; clay content and smectitic mineralogy; flooding during the growing season; ponding; depth to wetness; available water capacity (AWC); slope; depth to soft bedrock; depth to a cemented pan; fragments larger than 75 millimeters; sodium content (SAR); pH; clayey or sandy textures; permeability less than .5 cm/hr, resulting in saturated soil conditions; permeability more than 15 cm/hr, resulting in seepage; electrical conductivity (EC); sodium content expressed as sodium adsorption ratio (SAR); and sulfur content based on taxonomic placement.

Table 20.--Engineering Index Properties

(Absence of an entry indicates that the data were not estimated. The data in this table apply to the representative te
one that occurs most commonly for a given soil horizon or layer. Only one representative texture is assigned to a
Interpretations that use texture criteria consider only the representative texture. Other textures occurring in t
under the heading "Soil Series and Their Morphology." USDA textures with medial or ashy modifiers are based on ap
Liquid limit and plasticity index are not reported for these horizons because of ASTM procedure limitations)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
100:									
Anita clay	0-1	Clay	CH	A-7-6	0	0-30	75-100	70-100	65-10
	1-3	Clay	CH	A-7-6	0	0-30	75-100	70-100	65-10
	3-10	Clay	CH	A-7-6	0	0-40	65-100	60-100	55-10
	10-15	Clay	CH	A-7-6	0	0-40	65-100	60-100	55-10
	15-20	Cemented material	---	---	0	0-90	---	---	---
Galt clay	0-3	Clay	CH	A-7-6	0	0-10	65-100	60-100	55-10
	3-13	Clay	CH	A-7-6	0	0-10	65-100	60-100	55-10
	13-29	Clay	CH	A-7-6	0	0-25	60-100	55-100	50-10
	29-32	Clay	CH	A-7-6	0	0	65-100	60-100	55-10
	32-39	Cemented material	---	---	0	0	---	---	---
104:									
Bosquejo clay	0-8	Clay	CH	A-7-6	0	0	100	100	90-10
	8-19	Clay	CH	A-7-6	0	0	100	100	90-10
	19-24	Clay	CH	A-7-6	0	0	100	100	90-10
	24-37	Silty clay	CH	A-7-6	0	0	100	100	90-10
	37-44	Clay loam	CL	A-6	0	0	100	100	85-10
	44-46	Loam	CL	A-6	0	0	100	100	85-10
	46-60	Loam	CL	A-6	0	0	100	100	85-95
105:									
Busacca clay loam	0-3	Clay loam	CH	A-7-6	0	0	100	100	90-10
	3-8	Clay loam	CL	A-7-6	0	0	100	100	90-10
	8-16	Clay loam	CL	A-7-6	0	0	100	100	90-10
	16-28	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	28-43	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	43-60	Clay loam	CL	A-7-6	0	0	100	100	85-10
	60-72	Clay loam	CL	A-6	0	0	100	100	85-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
108:									
Tuscan gravelly loam----------	0-2	Gravelly loam	CL	A-7-6	0	0	65-95	60-90	50-85
	2-4	Clay loam	CL	A-7-6	0	0-40	40-95	35-90	30-90
	4-7	Gravelly clay	CH	A-7-6	0	0-40	40-95	35-90	30-90
	7-11	Cobbly clay	CH	A-7-6	0	0-40	40-95	35-90	30-90
	11	Cemented gravelly material	---	---	0	---	---	---	---
Igo gravelly loam----------	0-1	Gravelly loam	CL	A-6	0	0-10	60-100	55-100	40-10
	1-5	Gravelly clay loam	CL	A-7-6	0	0-10	60-100	55-100	40-10
	5-9	Gravelly clay loam	CL	A-7-6	0	0-10	60-100	55-100	40-10
	9	Cemented material	---	---	---	---	---	---	---
Anita clay----------	0-1	Clay	CH	A-7-6	0	0-30	75-100	70-100	65-10
	1-3	Clay	CH	A-7-6	0	0-30	75-100	70-100	65-10
	3-10	Clay	CH	A-7-6	0	0-40	65-100	60-100	55-10
	10-15	Clay	CH	A-7-6	0	0-40	65-100	60-100	55-10
	15-20	Cemented material	---	---	0	0-90	---	---	---
109:									
Bosquejo clay loam----------	0-5	Clay loam	CH	A-7-6	0	0	100	100	90-10
	5-24	Clay	CH	A-7-6	0	0	100	100	90-10
	24-40	Clay	CH	A-7-6	0	0	100	100	90-10
	40-60	Loam	CL	A-6	0	0	100	100	85-10
110:									
Bosquejo silt loam, overwash, occasionally flooded----------	0-8	Silt loam	CL	A-7-6	0	0	100	100	90-10
	8-22	Clay	CH	A-7-6	0	0	100	100	90-10
	22-40	Clay	CH	A-7-6	0	0	100	100	90-10
	40-55	Clay loam	CL	A-7-6	0	0	100	100	85-10
	55-70	Clay loam	CL	A-7-6	0	0	100	100	85-10
111yu:									
Auburn loam----------	0-17	Loam	CL-ML, ML	A-4	0	0-10	95-100	75-95	70-90
	17	Bedrock	---	---	---	---	---	---	---
Sobrante loam----------	0-5	Loam	ML	A-4	0	0	95-100	75-90	70-85
	5-27	Clay loam	CL, CL-ML	A-4, A-6	0	0-5	95-100	75-90	70-90
	27-39	Weathered bedrock	---	---	---	---	---	---	---
	39	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
114yu:									
Auburn gravelly loam----------	0-17	Gravelly loam	CL-ML, GC-GM, GM, ML	A-4	0	0-10	65-90	60-75	55-70
	17	Bedrock	---	---	---	---	---	---	---
Sobrante gravelly loam---------	0-5	Gravelly loam	GM, SM	A-4	0	0-5	60-80	55-75	50-70
	5-35	Gravelly clay loam	CL, CL-ML, GC, GC-GM	A-4, A-6	0	0-5	60-80	55-75	50-70
	35-40	Weathered bedrock	---	---	---	---	---	---	---
	40	Bedrock	---	---	---	---	---	---	---
118:									
Xerorthents, tailings----------	0-3	Very gravelly sandy loam	GC	A-2-4	0	15-75	45-75	40-70	25-50
	3-8	Extremely gravelly sandy loam	GC	A-2-4	0	10-75	30-60	25-55	15-40
	8-21	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85
	21-26	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85
	26-35	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85
	35-48	Loamy coarse sand	SM	A-2-4	0	0-50	10-100	5-100	0-85
	48-59	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85
	59-81	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85
118co:									
Clear Lake clay, frequently flooded----------	0-4	Clay	CH	A-7	0	0	100	100	95-10
	4-10	Clay	CH	A-7	0	0	100	100	95-10
	10-20	Clay	CH	A-7	0	0	100	100	95-10
	20-34	Clay	CH	A-7	0	0	100	100	95-10
	34-47	Clay	CH	A-7	0	0	100	100	95-10
	47-59	Clay	CH	A-7	0	0	100	100	95-10
	59-79	Clay	CH	A-7	0	0	100	100	95-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
119:									
Xerorthents, tailings----------	0-3	Very gravelly sandy loam	GC	A-2-4	0	15-75	45-75	40-70	25-50
	3-8	Extremely gravelly sandy loam	GC	A-2-4	0	10-75	30-60	25-55	15-40
	8-21	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85
	21-26	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85
	26-35	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85
	35-48	Loamy coarse sand	SM	A-2-4	0	0-50	10-100	5-100	0-85
	48-59	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85
	59-81	Loamy sand	SM	A-2-4	0	0-50	10-100	5-100	0-85
Urban land.									
119yu:									
Auburn gravelly loam----------	0-17	Gravelly loam	CL-ML, GC-GM, GM, ML	A-4	0	0-10	65-90	60-75	55-70
	17	Bedrock	---	---	---	---	---	---	---
Sobrante gravelly loam---------	0-5	Gravelly loam	GM, SM	A-4	0	0-5	60-80	55-75	50-70
	5-35	Gravelly clay loam	CL, CL-ML, GC, GC-GM	A-4, A-6	0	0-5	60-80	55-75	50-70
	35-40	Weathered bedrock	---	---	---	---	---	---	---
	40	Bedrock	---	---	---	---	---	---	---
Rock outcrop.									
120:									
Gridley taxadjunct clay loam---	0-4	Clay loam	CL	A-7-6	0	0	100	100	90-10
	4-9	Clay loam	CH	A-7-6	0	0	100	95-100	85-95
	9-15	Clay loam	CL	A-7-6	0	0	100	95-100	85-95
	15-21	Clay loam	CL	A-7-6	0	0	100	100	90-10
	21-60	Cemented coarse sandy loam	---	---	0	0	100	100	60-70
121:									
Boga loam----------	0-3	Loam	CL	A-7-6	0	0	100	100	85-10
	3-6	Loam	CL	A-6	0	0	100	100	85-10
	6-14	Clay loam	CL	A-6	0	0	100	100	85-10
	14-29	Clay loam	CL	A-7-6	0	0	100	100	85-10
	29-53	Clay loam	CL	A-6	0	0	100	100	85-10
	53-73	Loam	CL	A-6	0	0	100	100	85-10
	73-80	Dense material	CL	A-6	0	0	100	100	70-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
121:									
Loemstone loam----------	0-2	Loam	CL	A-7-6	0	0	100	100	85-10
	2-4	Silt loam	CL	A-6	0	0	100	100	85-10
	4-10	Silt loam	CL	A-6	0	0	100	100	85-10
	10-18	Clay loam	CL	A-6	0	0	100	100	85-10
	18-23	Silty clay loam	CL	A-7-6	0	0	100	100	85-10
	23-32	Silt loam	CL	A-6	0	0	100	100	85-10
	32-40	Silt loam	CL	A-6	0	0	100	100	85-10
	40-48	Silt loam	CL	A-6	0	0	100	100	85-10
	48-57	Dense material	ML	A-4	0	0	100	100	70-10
121su:									
Columbia fine sandy loam, frequently flooded----------	0-14	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	65-90
	14-60	Stratified fine sandy loam to very fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	65-90
125:									
Gridley taxadjunct loam--------	0-10	Loam	CL	A-6	0	0	100	100	85-95
	10-20	Clay loam	CH	A-7-6	0	0	100	100	90-10
	20-22	Clay	CH	A-7-6	0	0	100	100	90-10
	22-60	Cemented material	---	---	---	---	---	---	---
Calcic Haploxerolls sandy loam	0-5	Sandy loam	SM	A-2-4	0	0	100	100	60-95
	5-17	Sandy loam	SM	A-2-4	0	0	100	100	60-95
	17-20	Sandy loam	SM	A-2-4	0	0	100	100	60-95
	20-33	Sandy loam	SM	A-2-4	0	0	100	100	60-95
	33-44	Sandy loam	SM	A-2-4	0	0	100	100	50-70
	44-72	Dense material			0	0	---	---	---
126:									
Liveoak sandy loam----------	0-4	Sandy loam	SC	A-4	0	0	95-100	90-100	55-70
	4-17	Sandy loam	SC	A-6	0	0	95-100	90-100	55-70
	17-37	Sandy loam	SC	A-6	0	0	90-100	85-100	50-90
	37-48	Sandy loam	SC	A-6	0	0	90-100	85-100	50-90
	48-61	Sandy loam	SC-SM	A-2-4	0	0	90-100	85-100	50-90
	61-71	Sand	SM	A-2-4	0	0	75-100	70-100	35-70
	71-75	Gravelly sand	SP-SM	A-1-b	0	0	75-100	70-100	35-70

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
127:									
Gridley taxadjunct loam--------	0-10	Loam	CL	A-6	0	0	100	100	85-95
	10-20	Clay loam	CH	A-7-6	0	0	100	100	90-10
	20-22	Clay	CH	A-7-6	0	0	100	100	90-10
	22-60	Cemented material	---	---	---	---	---	---	---
130:									
Eastbiggs loam-----------------	0-3	Loam	CL	A-6	0	0	100	100	85-95
	3-10	Loam	CL	A-6	0	0	100	100	70-95
	10-17	Loam	CL	A-6	0	0	100	100	80-95
	17-27	Clay	CH	A-7-6	0	0	100	100	90-10
	27-60	Cemented material	---	---	---	---	---	---	---
133:									
Eastbiggs loam-----------------	0-3	Loam	CL	A-6	0	0	100	100	85-95
	3-10	Loam	CL	A-6	0	0	100	100	70-95
	10-17	Loam	CL	A-6	0	0	100	100	80-95
	17-27	Clay	CH	A-7-6	0	0	100	100	90-10
	27-60	Cemented material	---	---	---	---	---	---	---
Galt clay loam-----------------	0-6	Clay loam	CL	A-7-6	0	0	100	100	90-10
	6-20	Clay loam	CH	A-7-6	0	0	100	100	90-10
	20-27	Clay	CH	A-7-6	0	0	100	100	90-10
	27-30	Clay	CH	A-7-6	0	0	100	100	90-10
	30	Cemented material	---	---	---	---	---	---	---
136:									
Duric Xerarents, cut----------	0-3	Clay loam	CL	A-7-6	0	0	100	100	60-10
	3-8	Clay loam	CL	A-7-6	0	0	100	100	80-10
	8-10	Clay loam	CL	A-7-6	0	0	100	100	80-10
	10-13	Clay	CH	A-7-6	0	0	100	100	90-10
	13	Cemented material	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
136:									
Duric Xerarents, fill----------	0-5	Clay loam	CL	A-7-6	0	0	100	100	60-10
	5-12	Clay loam	CL	A-7-6	0	0	100	100	85-10
	12-16	Clay	CH	A-7-6	0	0	100	100	90-10
	16-30	Cemented sandy loam	SC	A-2-4	0	0	100	100	60-70
	30-38	Sandy clay loam	SC	A-6	0	0	100	100	80-10
	38-48	Sandy clay loam	SC	A-6	0	0	100	100	80-10
	48	Cemented material	---	---	0	0	---	---	---
Eastbiggs fine sandy loam, leveled----------	0-5	Fine sandy loam	SC	A-4	0	0	100	100	70-95
	5-12	Fine sandy loam	CL	A-6	0	0	100	100	70-95
	12-18	Sandy clay loam	SC	A-6	0	0	100	100	80-95
	18-23	Sandy clay loam	SC	A-6	0	0	100	100	80-95
	23-26	Clay loam	CL	A-7-6	0	0	100	100	90-10
	26-30	Clay	CH	A-7-6	0	0	100	100	90-10
	30	Cemented material	---	---	0	0	---	---	---
138su:									
Liveoak sandy clay loam--------	0-13	Sandy clay loam	SC-SM	A-4	0	0	95-100	90-100	70-90
	13-53	Sandy clay loam	SC-SM	A-4	0	0	90-100	85-100	50-90
	53-60	Sandy loam	SC	A-2-4	0	0	75-100	65-100	35-70
139su:									
Liveoak taxadjunct loam, frequently flooded----------	0-6	Loam	CL-ML, ML	A-4	0	0	100	100	85-95
	6-54	Loam	CL-ML, ML	A-4	0	0	100	100	85-95
	54-63	Cemented material	---	---	---	---	---	---	---
	63-73	Very fine sandy loam	ML	A-4	0	0	100	100	85-95
Galt taxadjunct clay loam, frequently flooded----------	0-21	Clay loam	CL	A-6	0	0	100	100	90-10
	21-22	Cemented material	---	---	---	---	---	---	---
	22-25	Loam	ML	A-4	0	0	100	100	85-95
	25-26	Cemented material	---	---	---	---	---	---	---
	26	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
143su:									
Marcum clay loam----------	0-16	Clay loam	CL	A-6	0	0	100	100	90-10
	16-28	Clay loam	CL	A-6, A-7	0	0	100	100	90-10
	28-40	Clay	CH, CL	A-7	0	0	100	100	90-10
	40-43	Clay loam	CL	A-6, A-7	0	0	100	100	90-10
	43-62	Bedrock	---	---	---	---	---	---	---
Gridley clay loam----------	0-19	Clay loam	CL	A-6	0	0	100	100	90-10
	19-37	Clay	CH, CL	A-7	0	0	100	100	90-10
	37	Bedrock	---	---	---	---	---	---	---
149yu:									
Flanly sandy loam----------	0-9	Sandy loam	SM	A-4	0	0-15	80-100	75-100	55-75
	9-16	Loam	CL-ML, ML, SC-SM, SM	A-4	0	0-15	80-100	75-100	65-85
	16-34	Loam	CL	A-6	0	0-15	80-100	75-100	75-95
	34-38	Weathered bedrock	---	---	---	---	---	---	---
150:									
Columbia stratified sand to fine sandy loam----------	0-5	Stratified sand to fine sandy loam	SC-SM	A-2-4	0	0	100	95-100	50-95
	5-10	Stratified silt loam to sandy loam	CL-ML	A-4	0	0	100	95-100	50-10
	10-29	Loam	CL-ML	A-4	0	0	100	95-100	50-10
	29-37	Fine sandy loam	SC-SM	A-4	0	0	100	95-100	50-10
	37-46	Sand	SP-SM	A-2-4	0	0	100	95-100	50-10
	46-60	Stratified fine sandy loam to fine sand	SC-SM	A-4	0	0	55-100	50-100	25-10
150su:									
Olashes sandy loam----------	0-4	Sandy loam	SC-SM, SM	A-4	0	0	85-100	80-100	50-70
	4-52	Sandy clay loam	SC	A-6	0	0	85-100	80-100	70-90
	52-60	Sand	SM, SW-SM	A-1	0	0	85-100	80-100	35-50
151yu:									
Flanly sandy loam----------	0-9	Sandy loam	SM	A-4	0	0-15	80-100	75-100	55-75
	9-16	Loam	CL-ML, ML, SC-SM, SM	A-4	0	0-15	80-100	75-100	65-85
	16-34	Loam	CL	A-6	0	0-15	80-100	75-100	75-95
	34-38	Weathered bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
152:									
Gianella fine sandy loam, frequently flooded	0-6	Fine sandy loam	CL	A-4	0	0	100	100	70-85
	6-15	Silt loam	CL	A-4	0	0	100	100	50-10
	15-20	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-10
	20-22	Silt loam	CL	A-4	0	0	100	100	50-10
	22-27	Silt loam	CL	A-4	0	0	100	100	50-10
	27-32	Fine sandy loam	CL	A-4	0	0	100	100	50-10
	32-43	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-10
	43-64	Fine sandy loam	CL	A-4	0	0	100	100	50-10
	64-80	Loamy sand	SM	A-2-4	0	0	100	100	50-10
153:									
Gianella sandy loam, frequently flooded	0-6	Sandy loam	SM	A-4	0	0	100	100	60-70
	6-17	Sandy loam	SM	A-4	0	0	100	100	50-10
	17-24	Sandy loam	SM	A-4	0	0	100	100	50-10
	24-29	Sandy loam	SC-SM	A-4	0	0	100	100	50-10
	29-32	Loamy sand	SM	A-2-4	0	0	100	100	50-10
	32-43	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-10
	43-57	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-10
	57-67	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-10
	67-68	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-10
	68-71	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-10
	71-80	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-10
	80-84	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-10
154:									
Gianella silt loam, frequently flooded	0-2	Silt loam	ML	A-4	0	0	100	100	90-10
	2-8	Loamy fine sand	SM	A-2-4	0	0	100	100	50-10
	8-15	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-10
	15-22	Very fine sandy loam	ML	A-4	0	0	100	100	50-10
	22-31	Very fine sandy loam	ML	A-4	0	0	100	100	50-10
	31-41	Very fine sandy loam	CL-ML	A-4	0	0	100	100	50-10
	41-50	Silt loam	CL	A-4	0	0	100	100	50-10
	50-54	Silt loam	CL	A-4	0	0	100	100	50-10
	54-64	Silt loam	CL	A-4	0	0	100	100	50-10
	64-66	Silt loam	CL-ML	A-4	0	0	100	100	50-10
	66-69	Loam	CL-ML	A-4	0	0	100	100	50-10
	69-83	Loamy fine sand	SM	A-2-4	0	0	100	100	50-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
158:									
Gianella fine sandy loam, occasionally flooded	0-3	Fine sandy loam	SM	A-4	0	0	100	100	70-85
	3-12	Fine sandy loam	SC	A-4	0	0	100	100	70-85
	12-19	Loam	CL	A-4	0	0	100	100	50-10
	19-28	Fine sandy loam	SC-SM	A-4	0	0	100	100	50-10
	28-48	Loam	CL-ML	A-4	0	0	100	100	50-10
	48-57	Sandy loam	SC-SM	A-2-4	0	0	100	100	50-10
	57-80	Loamy sand	SM	A-2-4	0	0	100	100	50-10
160:									
Gianella loam, occasionally flooded	0-18	Loam	ML	A-6	0	0	100	100	85-95
	18-42	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-10
	42-52	Fine sandy loam	CL	A-4	0	0	100	100	50-10
	52-70	Loamy sand	SM	A-2-4	0	0	100	100	50-10
161:									
Gianella fine sandy loam, rarely flooded	0-3	Fine sandy loam	SM	A-4	0	0	100	100	70-85
	3-12	Fine sandy loam	SC	A-4	0	0	100	100	70-85
	12-19	Loam	CL	A-4	0	0	100	100	50-10
	19-28	Fine sandy loam	SC-SM	A-4	0	0	100	100	50-10
	28-48	Loam	CL-ML	A-4	0	0	100	100	50-10
	48-57	Sandy loam	SC-SM	A-2-4	0	0	100	100	50-10
	57-80	Loamy sand	SM	A-2-4	0	0	100	100	50-10
162:									
Gianella loam, rarely flooded	0-18	Loam	ML	A-6	0	0	100	100	85-95
	18-42	Fine sandy loam	CL-ML	A-4	0	0	100	100	50-10
	42-52	Fine sandy loam	CL	A-4	0	0	100	100	50-10
	52-70	Loamy sand	SM	A-2-4	0	0	100	100	50-10
163yu:									
Holillipah loamy sand	0-6	Loamy sand	SM	A-2	0	0	90-100	85-100	60-75
	6-66	Stratified sand to silt loam	SM	A-1, A-2	0	0	80-100	75-100	35-75
165yu:									
Holland loam	0-15	Loam	ML	A-4	0	0	90-100	85-100	65-85
	15-65	Clay loam	CL, SC	A-6	0	0	90-100	85-100	70-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
165yu:									
Hoda loam----------	0-7	Loam	ML	A-4	0	0	90-100	85-100	75-85
	7-14	Loam	CL, ML	A-4, A-6	0	0	95-100	90-100	60-85
	14-72	Clay	MH	A-7	0	0	95-100	90-100	75-90
Hotaw loam----------	0-12	Loam	ML	A-4	0	0	90-100	85-100	65-85
	12-34	Sandy clay loam	CL, SC	A-6	0	0-5	90-100	85-100	70-90
	34	Weathered bedrock	---	---	---	---	---	---	---
173yu:									
Hotaw loam----------	0-12	Loam	ML	A-4	0	0	90-100	85-100	65-85
	12-34	Sandy clay loam	CL, SC	A-6	0	0-5	90-100	85-100	70-90
	34	Weathered bedrock	---	---	---	---	---	---	---
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60
	19	Bedrock	---	---	---	---	---	---	---
Holland loam----------	0-15	Loam	ML	A-4	0	0	90-100	85-100	65-85
	15-65	Clay loam	CL, SC	A-6	0	0	90-100	85-100	70-90
175:									
Farwell clay loam, rarely flooded----------	0-5	Clay loam	CL	A-7-6	0	0	95-100	90-100	80-10
	5-9	Clay loam	CL	A-7-6	0	0	95-100	90-100	80-10
	9-18	Clay loam	CL	A-7-6	0	0	95-100	90-100	80-10
	18-26	Clay loam	CL	A-7-6	0	0	95-100	90-100	80-10
	26-33	Clay loam	CL	A-7-6	0	0	95-100	90-100	80-10
	33-43	Clay loam	CH	A-7-6	0	0	95-100	90-100	80-10
	43-57	Clay loam	CL	A-7-6	0	0	95-100	90-100	80-10
	57-72	Clay loam	CL	A-7-6	0	0	95-100	90-100	80-10
	72-81	Loam	CL	A-6	0	0	95-100	90-100	75-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
176:									
Farwell loam, occasionally flooded	0-6	Loam	CL	A-6	0	0	100	100	85-95
	6-20	Loam	CL	A-6	0	0	100	100	85-10
	20-36	Loam	CL	A-6	0	0	100	100	85-10
	36-50	Clay loam	CL	A-7-6	0	0	100	100	90-10
	50-60	Loam	CL	A-6	0	0	95-100	90-100	75-95
176yu:									
Jocal loam	0-8	Loam	ML	A-4	0	0	80-95	75-95	65-80
	8-73	Clay loam	CL, ML	A-6, A-7	0	0	80-95	75-95	70-90
177:									
Farwell silt loam, occasionally flooded	0-6	Silt loam	CL	A-6	0	0	100	100	90-10
	6-11	Silty clay loam	CH	A-7-6	0	0	100	100	85-10
	11-22	Silt loam	CL	A-6	0	0	100	100	90-10
	22-33	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	33-39	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	39-49	Silt loam	CL	A-6	0	0	95-100	90-100	80-10
	49-62	Loam, silty clay loam	CL	A-6	0	0	95-100	90-100	75-10
178:									
Arbuckle gravelly loam	0-4	Gravelly loam	CL	A-6	0	0	60-80	55-75	40-70
	4-9	Gravelly loam	CL	A-6	0	0	60-80	55-75	40-70
	9-20	Gravelly loam	CL	A-6	0	0	60-90	55-85	40-80
	20-32	Loam, gravelly loam	CL	A-6	0	0	60-90	55-85	40-80
	32-49	Gravelly loam	CL	A-6	0	0	60-90	55-85	40-80
	49-68	Very gravelly sandy clay loam	GC	A-2-6	0	0	15-45	10-40	5-35
	68-86	Very gravelly sandy clay loam	GC	A-2-6	0	0	15-45	10-40	5-35
179:									
Moda taxadjunct loam	0-2	Loam	CL-ML	A-4	0	0	90-95	85-90	70-85
	2-6	Loam	CL	A-6	0	0	90-95	85-90	70-85
	6-13	Loam	CL	A-6	0	0	90-95	85-90	65-90
	13-22	Clay	CH	A-7-6	0	0	90-100	85-100	75-10
	22	Cemented material	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
179:									
Arbuckle gravelly loam---------	0-4	Gravelly loam	CL	A-6	0	0	60-80	55-75	40-70
	4-9	Gravelly loam	CL	A-6	0	0	60-80	55-75	40-70
	9-20	Gravelly loam	CL	A-6	0	0	60-90	55-85	40-80
	20-32	Loam, gravelly loam	CL	A-6	0	0	60-90	55-85	40-80
	32-49	Gravelly loam	CL	A-6	0	0	60-90	55-85	40-80
	49-68	Very gravelly sandy clay loam	GC	A-2-6	0	0	15-45	10-40	5-35
	68-86	Very gravelly sandy clay loam	GC	A-2-6	0	0	15-45	10-40	5-35
180:									
Dodgeland silty clay loam, occasionally flooded----------	0-4	Silty clay loam	CH	A-7-6	0	0	100	100	95-10
	4-8	Silty clay	CH	A-7-6	0	0	100	100	90-10
	8-18	Silty clay	CH	A-7-6	0	0	100	100	90-10
	18-33	Silty clay	CH	A-7-6	0	0	100	100	90-10
	33-45	Silty clay	CH	A-7-6	0	0	100	100	90-10
	45-53	Silty clay	CH	A-7-6	0	0	100	100	90-10
	53-60	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	60-70	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	70-80	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
181:									
Dodgeland silty clay loam, frequently flooded----------	0-4	Silty clay loam	CH	A-7-6	0	0	100	100	95-10
	4-8	Silty clay	CH	A-7-6	0	0	100	100	90-10
	8-18	Silty clay	CH	A-7-6	0	0	100	100	90-10
	18-33	Silty clay	CH	A-7-6	0	0	100	100	90-10
	33-45	Silty clay	CH	A-7-6	0	0	100	100	90-10
	45-53	Silty clay	CH	A-7-6	0	0	100	100	90-10
	53-60	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	60-70	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	70-80	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
188yu:									
Mariposa taxadjunct gravelly loam---------------------------	0-4	Gravelly loam	GM, SM	A-2, A-4	0	0-5	65-85	60-75	40-60
	4-23	Gravelly clay loam	GC, GC-GM, SC, SC-SM	A-2, A-4, A-6	0	0-5	65-85	55-75	40-60
	23	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
189:									
Esquon silt loam, overwash-----	0-4	Silt loam	CL	A-6	0	0	100	100	90-10
	4-9	Silt loam	CL	A-6	0	0	100	100	90-10
	9-15	Stratified very fine sandy loam to silt loam	CL-ML	A-4	0	0	100	100	85-10
	15-35	Silty clay	CH	A-7-6	0	0	100	100	90-10
	35-48	Silty clay	CH	A-7-6	0	0	100	100	90-10
	48-60	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	60	Cemented material	---	---	0	0	---	---	---
189yu:									
Mariposa taxadjunct gravelly loam----------	0-4	Gravelly loam	GM, SM	A-2, A-4	0	0-5	65-85	60-75	40-60
	4-23	Gravelly clay loam	GC, GC-GM, SC, SC-SM	A-2, A-4, A-6	0	0-5	65-85	55-75	40-60
	23	Bedrock	---	---	---	---	---	---	---
196yu:									
Mildred cobbly loam----------	0-3	Cobbly loam	CL-ML, ML, SC-SM, SM	A-4	0	10-40	65-90	60-85	55-75
	3-9	Cobbly clay loam	CL	A-6	0	10-40	65-90	60-85	60-80
	9-23	Clay	CH, CL	A-7	0	0-20	80-100	75-100	70-90
	23	Bedrock	---	---	---	---	---	---	---
200:									
Parrott silt loam, occasionally flooded----------	0-2	Silt loam	ML	A-7-6	0	0	100	100	90-10
	2-8	Silt loam	CL	A-6	0	0	100	100	90-10
	8-20	Silt loam	CL	A-6	0	0	100	100	90-10
	20-37	Silt loam	CL	A-6	0	0	100	100	60-10
	37-49	Silt loam	CL	A-6	0	0	100	100	60-10
	49-63	Silt loam	CL	A-6	0	0	100	95-100	60-10
	63-89	Silt loam	CL	A-6	0	0	100	95-100	60-10
201:									
Parrott silt loam, frequently flooded----------	0-2	Silt loam	ML	A-7-6	0	0	100	100	90-10
	2-8	Silt loam	CL	A-6	0	0	100	100	90-10
	8-20	Silt loam	CL	A-6	0	0	100	100	90-10
	20-37	Silt loam	CL	A-6	0	0	100	100	60-10
	37-49	Silt loam	CL	A-6	0	0	100	100	60-10
	49-63	Silt loam	CL	A-6	0	0	100	95-100	60-10
	63-89	Silt loam	CL	A-6	0	0	100	95-100	60-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
203:									
Kusalslough silty clay loam, occasionally flooded----------	0-4	Silty clay loam	CL	A-7-6	0	0	100	100	95-10
	4-12	Silty clay loam	CL	A-7-6	0	0	100	100	95-10
	12-21	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	21-31	Silty clay loam	CH	A-7-6	0	0	100	100	90-10
	31-41	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	41-57	Silty clay	CH	A-7-6	0	0	100	100	90-10
	57-69	Silty clay	CH	A-7-6	0	0	100	100	90-10
	69-80	Silty clay	CH	A-7-6	0	0	100	100	90-10
205:									
Parrott silt loam, frequently flooded-----------------------	0-2	Silt loam	ML	A-7-6	0	0	100	100	90-10
	2-8	Silt loam	CL	A-6	0	0	100	100	90-10
	8-20	Silt loam	CL	A-6	0	0	100	100	90-10
	20-37	Silt loam	CL	A-6	0	0	100	100	60-10
	37-49	Silt loam	CL	A-6	0	0	100	100	60-10
	49-63	Silt loam	CL	A-6	0	0	100	95-100	60-10
	63-89	Silt loam	CL	A-6	0	0	100	95-100	60-10
Vermet silt loam, frequently flooded-----------------------	0-2	Silt loam	ML	A-6	0	0	100	85-100	75-10
	2-8	Silt loam	CL	A-6	0	0	100	70-100	65-10
	8-13	Silt loam	CL	A-6	0	0	100	70-100	65-10
	13-16	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	16-26	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	26-41	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	41-62	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	62-72	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
206:									
Islandbar sandy loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
206:									
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60
	19	Bedrock	---	---	---	---	---	---	---
207:									
Islandbar sandy loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60
	19	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
208:									
Islandbar sandy loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60
	19	Bedrock	---	---	---	---	---	---	---
209:									
Islandbar sandy loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
209:									
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60
	19	Bedrock	---	---	---	---	---	---	---
210:									
Featherfalls sandy loam--------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70
	4-7	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70
	7-17	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95
	17-24	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95
	24-32	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95
	32-42	Sandy clay loam	CL	A-7-6	0	0	60-100	55-100	35-95
	42-61	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95
	61-72	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95
	72-80	Very paragravelly sandy clay loam	GC	A-2-6	0	0	20-100	15-100	5-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
210:									
Islandbar sandy loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70
211:									
Featherfalls sandy loam--------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70
	4-7	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70
	7-17	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95
	17-24	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95
	24-32	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95
	32-42	Sandy clay loam	CL	A-7-6	0	0	60-100	55-100	35-95
	42-61	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95
	61-72	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95
	72-80	Very paragravelly sandy clay loam	GC	A-2-6	0	0	20-100	15-100	5-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
211:									
Islandbar sandy loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70
212:									
Featherfalls sandy loam--------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70
	4-7	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70
	7-17	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95
	17-24	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95
	24-32	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95
	32-42	Sandy clay loam	CL	A-7-6	0	0	60-100	55-100	35-95
	42-61	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95
	61-72	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95
	72-80	Very paragravelly sandy clay loam	GC	A-2-6	0	0	20-100	15-100	5-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
212:									
Islandbar sandy loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70
213:									
Featherfalls sandy loam--------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70
	4-7	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-70
	7-17	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95
	17-24	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95
	24-32	Sandy clay loam	SC	A-6	0	0	60-100	55-100	35-95
	32-42	Sandy clay loam	CL	A-7-6	0	0	60-100	55-100	35-95
	42-61	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95
	61-72	Paracobbly sandy clay loam	CL	A-7-6	0	10-50	90-100	85-100	65-95
	72-80	Very paragravelly sandy clay loam	GC	A-2-6	0	0	20-100	15-100	5-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
213:									
Islandbar sandy loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-5	Sandy loam	SM	A-2-4	0	0	75-95	70-90	40-75
	5-9	Sandy loam	SC-SM	A-2-4	0	0	75-95	70-90	40-75
	9-27	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	27-36	Sandy loam	SM	A-2-4	0	0	60-100	55-100	35-85
	36-47	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	47-58	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-85
	58-62	Loamy sand	SM	A-2-4	0	0	45-100	40-100	20-70
	62-72	Extremely gravelly loamy sand	SW	A-1-a	0	0	15-100	10-100	5-70
214:									
Crystalhill gravelly coarse sandy loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-7	Gravelly coarse sandy loam	SM	A-2-4	0	0	65-100	60-90	35-70
	7-14	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	14-22	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	22-33	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	33-44	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	44-66	Sandy loam	SM	A-2-4	0	0	35-95	30-90	15-65
	66	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
214:									
Oregongulch gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Gravelly sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	4-7	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60
	7-13	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60
	13-18	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60
	18-24	Very gravelly sandy loam	GC	A-2-4	0	0	40-75	35-70	20-50
	24-60	Bedrock	---	---	0	0	0	0	0
Craigsaddle coarse sandy loam--	0-5	Coarse sandy loam	SM	A-2-4	0	0	90-100	85-100	50-70
	5-11	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	11-17	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	17-21	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	21-31	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90
	31-51	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90
	51-58	Gravelly sandy loam	SC	A-2-4	0	0	65-100	60-100	35-90
	58-80	Bedrock	---	---	0	0	---	---	---
Rock outcrop, trondhjemite.									
215:									
Crystalhill gravelly coarse sandy loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-7	Gravelly coarse sandy loam	SM	A-2-4	0	0	65-100	60-90	35-70
	7-14	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	14-22	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	22-33	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	33-44	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	44-66	Sandy loam	SM	A-2-4	0	0	35-95	30-90	15-65
	66	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
215:									
Oregongulch gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Gravelly sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	4-7	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60
	7-13	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60
	13-18	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60
	18-24	Very gravelly sandy loam	GC	A-2-4	0	0	40-75	35-70	20-50
	24-60	Bedrock	---	---	0	0	0	0	0
Craigsaddle coarse sandy loam--	0-5	Coarse sandy loam	SM	A-2-4	0	0	90-100	85-100	50-70
	5-11	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	11-17	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	17-21	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	21-31	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90
	31-51	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90
	51-58	Gravelly sandy loam	SC	A-2-4	0	0	65-100	60-100	35-90
	58-80	Bedrock	---	---	0	0	---	---	---
Rock outcrop, trondhjemite.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
216:									
Crystalhill gravelly coarse sandy loam	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-7	Gravelly coarse sandy loam	SM	A-2-4	0	0	65-100	60-90	35-70
	7-14	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	14-22	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	22-33	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	33-44	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	44-66	Sandy loam	SM	A-2-4	0	0	35-95	30-90	15-65
	66	Bedrock	---	---	0	0	---	---	---
Oregongulch gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Gravelly sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	4-7	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60
	7-13	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60
	13-18	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60
	18-24	Very gravelly sandy loam	GC	A-2-4	0	0	40-75	35-70	20-50
	24-60	Bedrock	---	---	0	0	0	0	0
Craigsaddle coarse sandy loam	0-5	Coarse sandy loam	SM	A-2-4	0	0	90-100	85-100	50-70
	5-11	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	11-17	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	17-21	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	21-31	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90
	31-51	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90
	51-58	Gravelly sandy loam	SC	A-2-4	0	0	65-100	60-100	35-90
	58-80	Bedrock	---	---	0	0	---	---	---
Rock outcrop, trondhjemite.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
217:									
Crystalhill gravelly coarse sandy loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-7	Gravelly coarse sandy loam	SM	A-2-4	0	0	65-100	60-90	35-70
	7-14	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	14-22	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	22-33	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	33-44	Gravelly sandy loam	SC-SM	A-2-4	0	0	65-95	60-90	35-65
	44-66	Sandy loam	SM	A-2-4	0	0	35-95	30-90	15-65
	66	Bedrock	---	---	0	0	---	---	---
Oregongulch gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Gravelly sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	4-7	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60
	7-13	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60
	13-18	Gravelly sandy loam	SC	A-2-4	0	0	60-90	55-85	30-60
	18-24	Very gravelly sandy loam	GC	A-2-4	0	0	40-75	35-70	20-50
	24-60	Bedrock	---	---	0	0	0	0	0
Craigsaddle coarse sandy loam--	0-5	Coarse sandy loam	SM	A-2-4	0	0	90-100	85-100	50-70
	5-11	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	11-17	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	17-21	Sandy loam	SC-SM	A-2-4	0	0	60-100	55-100	35-70
	21-31	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90
	31-51	Sandy loam	SC	A-2-4	0	0	60-100	55-100	35-90
	51-58	Gravelly sandy loam	SC	A-2-4	0	0	65-100	60-100	35-90
	58-80	Bedrock	---	---	0	0	---	---	---
Rock outcrop, trondhjemite.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
218:									
Rock outcrop, quartz diorite.									
Lithic Xerorthents gravelly sandy loam	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-4	Gravelly sandy loam	SM	A-1-b	0	0	55-95	50-90	30-65
	4-8	Sandy loam	SC-SM	A-2-4	0	0	55-90	50-85	30-60
	8	Bedrock	---	---	0	0	---	---	---
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60
	19	Bedrock	---	---	---	---	---	---	---
219:									
Rock outcrop, quartz diorite.									
Lithic Xerorthents gravelly sandy loam	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-4	Gravelly sandy loam	SM	A-1-b	0	0	55-95	50-90	30-65
	4-8	Sandy loam	SC-SM	A-2-4	0	0	55-90	50-85	30-60
	8	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
219:									
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60
	19	Bedrock	---	---	---	---	---	---	---
220:									
Esquon clay, frequently flooded	0-10	Clay	CH	A-7-6	0	0	100	100	90-10
	10-22	Clay	CH	A-7-6	0	0	100	100	90-10
	22-40	Clay	CH	A-7-6	0	0	100	100	90-10
	40-50	Clay loam	CL	A-7-6	0	0	100	100	90-10
	50	Cemented material	---	---	0	0	---	---	---
Clear Lake silty clay loam, overwash	0-0.5	Silty clay loam	CH	A-7-6	0	0	100	100	95-10
	0.5-7	Clay	CH	A-7-6	0	0	100	100	90-10
	7-19	Clay	CH	A-7-6	0	0	100	100	90-10
	19-29	Clay	CH	A-7-6	0	0	100	100	90-10
	29-40	Clay	CH	A-7-6	0	0	100	100	90-10
	40-55	Clay	CH	A-7-6	0	0	100	100	90-10
	55-80	Clay	CH	A-7-6	0	0	100	100	90-10
221yu:									
Sites loam	0-6	Loam	ML	A-4	0	0-5	90-100	80-95	60-75
	6-16	Clay loam	CL	A-6	0	0-5	90-100	85-95	65-75
	16-51	Clay	MH, ML	A-7	0	0	90-100	85-95	75-90
	51-61	Clay loam	CL	A-6	0	0-5	90-100	85-95	65-75
	61	Bedrock	---	---	---	---	---	---	---
222yu:									
Sites loam	0-6	Loam	ML	A-4	0	0-5	90-100	80-95	60-75
	6-16	Clay loam	CL	A-6	0	0-5	90-100	85-95	65-75
	16-51	Clay	MH, ML	A-7	0	0	90-100	85-95	75-90
	51-61	Clay loam	CL	A-6	0	0-5	90-100	85-95	65-75
	61	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
225yu:									
Sites gravelly loam, bedrock substratum	0-5	Gravelly loam	GM, SM	A-4	0	0-5	60-80	55-75	50-70
	5-53	Gravelly clay loam, gravelly clay	GM, MH, ML	A-7	0	0-5	60-80	55-75	50-70
	53	Bedrock	---	---	---	---	---	---	---
226yu:									
Sites gravelly loam, bedrock substratum	0-5	Gravelly loam	GM, SM	A-4	0	0-5	60-80	55-75	50-70
	5-53	Gravelly clay loam, gravelly clay	GM, MH, ML	A-7	0	0-5	60-80	55-75	50-70
	53	Bedrock	---	---	---	---	---	---	---
227yu:									
Sites gravelly loam, bedrock substratum	0-5	Gravelly loam	GM, SM	A-4	0	0-5	60-80	55-75	50-70
	5-53	Gravelly clay loam, gravelly clay	GM, MH, ML	A-7	0	0-5	60-80	55-75	50-70
	53	Bedrock	---	---	---	---	---	---	---
242yu:									
Surnuf loam	0-12	Loam	ML	A-4	0	0-5	90-100	85-100	75-85
	12-77	Clay loam, clay	MH, ML	A-7	0	0-5	90-100	85-100	80-90
243yu:									
Surnuf loam	0-12	Loam	ML	A-4	0	0-5	90-100	85-100	75-85
	12-77	Clay loam, clay	MH, ML	A-7	0	0-5	90-100	85-100	80-90
244yu:									
Surnuf loam	0-12	Loam	ML	A-4	0	0-5	90-100	85-100	75-85
	12-77	Clay loam, clay	MH, ML	A-7	0	0-5	90-100	85-100	80-90
245:									
Surnuf loam	0-12	Loam	ML	A-4	0	0-5	90-100	85-100	75-85
	12-77	Clay loam, clay	MH, ML	A-7	0	0-5	90-100	85-100	80-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
248yu:									
Trainer loam----------	0-9	Loam	CL-ML, ML	A-4	0	0	100	95-100	85-95
	9-36	Loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	95-100	75-85
	36-66	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	100	95-100	60-70
250:									
Llanoseco, occasionally flooded	0-8	Silty clay loam	CL	A-7-6	0	0	100	100	95-10
	8-18	Silty clay loam	CH	A-7-6	0	0	100	100	95-10
	18-28	Silty clay	CH	A-7-6	0	0	100	100	95-10
	28-41	Silty clay	CH	A-7-6	0	0	100	100	95-10
	41-57	Silty clay	CH	A-7-6	0	0	100	100	95-10
	57-71	Silty clay	CH	A-7-6	0	0	100	100	95-10
	71-83	Silty clay	CH	A-7-6	0	0	100	100	95-10
	83-89	Silty clay	CH	A-7-6	0	0	100	100	95-10
	89-93	Cemented material	---	---	---	---	---	---	---
252:									
Whitecabin silty clay, occasionally flooded----------	0-5	Silty clay	CH	A-7-6	0	0	100	100	90-10
	5-13	Silty clay	CH	A-7-6	0	0	100	100	90-10
	13-26	Silty clay	CH	A-7-6	0	0	100	100	90-10
	26-35	Silty clay	CH	A-7-6	0	0	100	100	90-10
	35-45	Silty clay	CH	A-7-6	0	0	100	100	90-10
	45-53	Silty clay	CH	A-7-6	0	0	100	100	90-10
	53-72	Cemented material	---	---	0	0	---	---	---
Ordferry silty clay, occasionally flooded----------	0-3	Silty clay	CH	A-7-6	0	0	100	100	90-10
	3-6	Silty clay	CH	A-7-6	0	0	100	100	90-10
	6-13	Silty clay	CH	A-7-6	0	0	100	100	90-10
	13-25	Silty clay	CH	A-7-6	0	0	100	100	90-10
	25-29	Silty clay	CH	A-7-6	0	0	100	100	90-10
	29-40	Cemented material	---	---	0	0	---	---	---
252yu:									
Woodleaf gravelly loam---------	0-9	Gravelly loam	CL, CL-ML	A-4, A-6	0	10-30	60-90	55-85	50-75
	9-28	Very gravelly clay loam, very gravelly clay	GC	A-7	0	15-45	40-60	35-55	35-50
	28	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
253yu:									
Woodleaf gravelly loam---------	0-9	Gravelly loam	CL, CL-ML	A-4, A-6	0	10-30	60-90	55-85	50-75
	9-28	Very gravelly clay loam, very gravelly clay	GC	A-7	0	15-45	40-60	35-55	35-50
	28	Bedrock	---	---	---	---	---	---	---
255:									
Whitecabin silty clay loam, occasionally flooded----------	0-8	Silty clay loam	CL	A-7-6	0	0	100	100	95-10
	8-20	Clay	CH	A-7-6	0	0	100	100	90-10
	20-44	Clay	CH	A-7-6	0	0	100	100	90-10
	44-60	Cemented material	---	---	0	0	---	---	---
Ordferry silty clay, occasionally flooded----------	0-3	Silty clay	CH	A-7-6	0	0	100	100	90-10
	3-6	Silty clay	CH	A-7-6	0	0	100	100	90-10
	6-13	Silty clay	CH	A-7-6	0	0	100	100	90-10
	13-25	Silty clay	CH	A-7-6	0	0	100	100	90-10
	25-29	Silty clay	CH	A-7-6	0	0	100	100	90-10
	29-40	Cemented material	---	---	0	0	---	---	---
256:									
Whitecabin silt loam, occasionally flooded----------	0-6	Silt loam	CL	A-6	0	0	100	100	90-10
	6-13	Clay	CH	A-7-6	0	0	100	100	90-10
	13-27	Clay	CH	A-7-6	0	0	100	100	90-10
	27-42	Clay	CH	A-7-6	0	0	100	100	90-10
	42-54	Clay loam	CL	A-7-6	0	0	100	100	90-10
	54-62	Cemented material	---	---	0	0	---	---	---
257:									
Llanoseco, frequently flooded--	0-8	Silty clay loam	CL	A-7-6	0	0	100	100	95-10
	8-18	Silty clay loam	CH	A-7-6	0	0	100	100	95-10
	18-28	Silty clay	CH	A-7-6	0	0	100	100	95-10
	28-41	Silty clay	CH	A-7-6	0	0	100	100	95-10
	41-57	Silty clay	CH	A-7-6	0	0	100	100	95-10
	57-71	Silty clay	CH	A-7-6	0	0	100	100	95-10
	71-83	Silty clay	CH	A-7-6	0	0	100	100	95-10
	83-89	Silty clay	CH	A-7-6	0	0	100	100	95-10
	89-93	Cemented material	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
258:									
Codora, occasionally flooded---	0-6	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	6-11	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	11-22	Silty clay loam	CH	A-7-6	0	0	100	100	90-10
	22-38	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	38-60	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
260:									
Ordferry silty clay, occasionally flooded----------	0-3	Silty clay	CH	A-7-6	0	0	100	100	90-10
	3-6	Silty clay	CH	A-7-6	0	0	100	100	90-10
	6-13	Silty clay	CH	A-7-6	0	0	100	100	90-10
	13-25	Silty clay	CH	A-7-6	0	0	100	100	90-10
	25-29	Silty clay	CH	A-7-6	0	0	100	100	90-10
	29-40	Cemented material	---	---	0	0	---	---	---
280:									
Columbia taxadjunct stratified very fine sandy loam----------	0-8	Stratified fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-95
	8-10	Fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-95
	10-19	Stratified fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-95
	19-30	Stratified fine sandy loam	SC-SM	A-4	0	0	100	95-100	70-95
	30-40	Stratified silt loam	CL-ML	A-4	0	0	100	95-100	85-10
	40-60	Stratified silt loam	CL-ML	A-4	0	0	100	95-100	85-10
290:									
Perkins gravelly loam----------	0-8	Gravelly loam	CL-ML, SC-SM, GC	A-4	0	0	65-80	60-75	50-70
	8-24	Gravelly loam	CL, SC, GC	A-4, A-6	0	0	65-80	60-75	55-75
	24-38	Very gravelly sandy clay loam	GC-GM, GC	A-1, A-2-6	0	0	30-55	25-50	20-50
	38-48	Very gravelly sandy loam	GC-GM, GP-GC	A-1, A-2-4	0	0	30-40	25-35	15-25
	48-73	Very gravelly sandy loam	SW-SM, GP-GC	A-1-a	0	0	30-80	25-75	15-50

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
300:									
Redsluff gravelly loam---------	0-2	Gravelly loam	GM	A-6	0	0	60-100	55-100	40-95
	2-5	Gravelly loam	GC	A-6	0	0-45	60-95	55-90	40-90
	5-12	Gravelly clay loam	CL	A-7-6	0	0-45	60-95	55-90	40-90
	12-21	Gravelly loam	GC	A-6	0	0-45	60-95	55-90	40-90
	21-29	Gravelly loam	GC	A-6	0	0-45	60-95	55-90	40-90
	29-37	Gravelly loam	GC	A-6	0	0-60	25-65	20-60	10-55
	37-42	Extremely gravelly sandy loam	GC	A-2-4	0	0-60	25-65	20-60	10-55
	42-80	Extremely gravelly loamy sand	GP-GM	A-1-a	0-10	25-60	40-90	35-85	20-65
301:									
Wafap gravelly loam-----------	0-1	Gravelly loam	CL	A-6	0	0-15	45-90	40-85	30-80
	1-5	Cobbly clay loam	CL	A-7-6	0	0-25	60-90	55-85	40-80
	5-13	Very cobbly clay loam	CL	A-7-6	0-10	10-75	25-90	20-85	15-85
	13-32	Extremely cobbly clay loam	CH	A-7-6	0-10	10-75	25-90	20-85	15-85
	32-39	Extremely cobbly clay loam	GC	A-7-6	0-10	10-75	25-90	20-85	15-85
	39-46	Extremely gravelly sandy clay loam	GC	A-2-6	0-10	45-75	25-55	20-50	15-50
	46	Cemented cobbly gravelly material	---	---	---	---	---	---	---
Hamslough clay-----------------	0-3	Clay	CH	A-7-6	0	0-25	80-95	75-90	65-90
	3-14	Cobbly clay	CH	A-7-6	0	0-25	80-95	75-90	65-90
	14-19	Extremely gravelly clay	GC	A-2-7	0	0-40	40-90	35-85	30-85
	19-27	Extremely gravelly sandy clay	GC	A-2-7	0	25-40	40-75	35-70	30-70
	27	Cemented cobbly gravelly material	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
302:									
Redtough loam----------	0-1	Loam	ML	A-7-5	0	0-10	55-100	50-100	40-95
	1-7	Gravelly loam	CL	A-6	0	0-55	50-100	45-90	40-85
	7-13	Very cobbly loam	CL	A-6	0	0-55	50-100	45-90	40-85
	13	Cemented very gravelly material	---	---	---	---	---	---	---
Redswale cobbly loam----------	0-1	Cobbly loam	ML	A-6	0	0-55	75-95	70-90	60-85
	1-7	Very cobbly loam	CL	A-6	0	0-50	50-95	45-90	40-85
	7	Cemented very gravelly material	---	---	---	---	---	---	---
303:									
Munjar gravelly loam----------	0-2	Gravelly loam	CL	A-6	0	0	60-80	55-75	40-70
	2-5	Gravelly loam	GC	A-6	0	0	60-80	55-75	40-70
	5-9	Gravelly loam	CL	A-6	0-10	5-55	50-80	45-75	40-75
	9-16	Gravelly loam	SC	A-6	0-10	10-55	50-80	45-75	40-75
	16-22	Extremely gravelly clay loam	GC	A-6	0-10	10-55	50-80	45-75	40-75
	22-31	Extremely cobbly sandy clay	GC	A-2-7	0-10	30-50	55-60	50-55	40-55
	31-46	Cemented extremely gravelly material	---	---	0-10	15-50	---	---	---
Tuscan taxadjunct gravelly clay loam----------	0-2	Gravelly clay loam	CL	A-7-6	0	0-10	75-90	70-85	60-80
	2-5	Gravelly clay	CH	A-7-6	0	0-30	55-90	50-85	40-85
	5-13	Gravelly clay	CH	A-7-6	0	0-30	55-90	50-85	45-85
	13-23	Gravelly clay loam	CH	A-7-6	0	0-30	55-90	50-85	45-85
	23-29	Very gravelly clay loam	GC	A-7-6	0	0-55	40-80	35-75	30-70
	29	Cemented extremely cobbly material	---	---	0	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
303:									
Galt clay----------	0-3	Clay	CH	A-7-6	0	0-10	65-100	60-100	55-10
	3-13	Clay	CH	A-7-6	0	0-10	65-100	60-100	55-10
	13-29	Clay	CH	A-7-6	0	0-25	60-100	55-100	50-10
	29-32	Clay	CH	A-7-6	0	0	65-100	60-100	55-10
	32-39	Cemented material	---	---	0	0	---	---	---
304:									
Redtough loam----------	0-1	Loam	ML	A-7-5	0	0-10	55-100	50-100	40-95
	1-7	Gravelly loam	CL	A-6	0	0-55	50-100	45-90	40-85
	7-13	Very cobbly loam	CL	A-6	0	0-55	50-100	45-90	40-85
	13	Cemented very gravelly material	---	---	---	---	---	---	---
305:									
Redtough gravelly loam---------	0-2	Gravelly loam	SM	A-7-5	0	0-10	55-100	50-100	40-95
	2-5	Gravelly loam	SC	A-6	0	0-55	50-100	45-90	40-85
	5-8	Gravelly loam	SC	A-6	0	0-55	50-100	45-90	40-85
	8-15	Clay loam	CL	A-6	0	0-55	50-100	45-90	40-85
	15	Cemented very gravelly material	---	---	---	---	---	---	---
Redswale loam----------	0-1	Loam	ML	A-4	0	0-55	75-100	70-100	60-90
	1-5	Very gravelly loam	GC	A-2-6	0	0-50	50-95	45-90	40-85
	5	Cemented very gravelly material	---	---	---	---	---	---	---
Anita, gravelly duripan--------	0-3	Gravelly clay	CH	A-7-5	0	0-30	80-95	75-90	65-90
	3-8	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85
	8-15	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85
	15	Cemented gravelly material	---	---	0	0-65	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
306:									
Duric Xerarents, fill----------	0-8	Loam	CL	A-6	0	0	40-100	35-100	30-10
	8-14	Sandy clay loam	SC	A-7-6	0	0	75-100	70-100	55-95
	14-20	Sandy clay loam	SC	A-6	0	0	75-100	70-100	55-95
	20-36	Sandy loam	SC	A-2-6	0	0	90-100	85-100	50-95
	36-40	Clay	CH	A-7-6	0	0	60-100	55-100	50-10
	40	Cemented material	---	---	0	0	---	---	---
Duric Xerarents, cut----------	0-13	Sandy loam	SC	A-2-4	0	0	75-100	70-100	40-10
	13-15	Gravelly sandy loam	SC	A-2-6	0	0	75-100	70-100	40-10
	15	Cemented material	---	---	0	0	---	---	---
307:									
Duric Xerarents clay loam, leveled----------	0-2	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-10
	2-12	Clay	CH	A-7-6	0	0	75-100	70-100	55-10
	12	Cemented material	---	---	0	0	---	---	---
310:									
Kimball loam----------	0-2	Loam	ML	A-6	0	0	85-100	75-100	60-95
	2-4	Loam	ML	A-6	0	0	85-100	75-100	60-95
	4-6	Loam	ML	A-6	0	0	85-100	75-100	60-95
	6-10	Loam	ML	A-6	0	0	85-100	75-100	60-95
	10-17	Loam	CL, CL-ML	A-6	0	0	85-100	75-100	60-10
	17-34	Clay	CH, CL	A-6	0	0	85-100	75-100	65-10
	34-46	Sandy clay loam	CL, SC	A-6	0	0	85-100	75-100	60-10
	46-64	Sandy clay loam	CL, SC	A-6	0	0	85-100	75-100	60-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
317:									
Thompsonflat loam----------	0-2	Loam	CL-ML	A-4	0	0	65-100	60-100	35-95
	2-5	Gravelly loam	GC	A-6	0-10	0-25	65-100	60-100	50-95
	5-12	Gravelly loam	CL	A-6	0-10	0-25	75-100	70-100	50-95
	12-19	Gravelly loam	CL	A-6	0-10	0-25	75-100	70-100	50-95
	19-29	Gravelly clay loam	CL	A-6	0-10	0-25	75-100	70-100	50-95
	29-35	Very gravelly clay	GC	A-2-7	0	0-15	25-100	20-100	10-10
	35-43	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-40	25-85	20-85	10-80
	43-80	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-40	25-85	20-85	10-80
318:									
Thompsonflat fine sandy loam---	0-3	Fine sandy loam	SC	A-4	0	0	65-100	60-100	35-95
	3-7	Fine sandy loam	SC	A-6	0-10	0-25	75-100	70-100	50-95
	7-11	Sandy clay loam	SC	A-6	0-10	0-25	75-100	70-100	50-95
	11-15	Sandy clay	SC	A-7-6	0-10	0-15	75-100	70-100	50-95
	15-22	Gravelly sandy clay	SC	A-2-7	0	0-15	25-100	20-100	10-10
	22-35	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-40	25-85	20-85	10-80
	35-45	Extremely gravelly coarse sandy loam	GC-GM	A-2-4	0	0-40	25-85	20-85	10-80
	45-53	Extremely gravelly coarse sandy loam	GM	A-1-a	0	0-40	25-85	20-85	10-80
	53-66	Extremely gravelly coarse sandy loam	GP-GM	A-1-a	0	0-40	25-85	20-85	10-80
	66-80	Extremely gravelly coarse sandy loam	GP-GM	A-1-a	0	0-40	25-85	20-85	10-80

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
318:									
Oroville gravelly fine sandy loam----------	0-2	Gravelly fine sandy loam	SC	A-2-6	0	0	75-95	70-90	40-85
	2-6	Gravelly sandy loam	SC	A-2-6	0	0	75-100	70-100	40-85
	6-13	Gravelly clay loam	CL	A-6	0	0	50-95	45-90	35-90
	13-17	Gravelly clay	CH	A-7-6	0	0	45-95	40-90	35-90
	17-23	Gravelly sandy clay	GC	A-2-7	0	0	45-95	40-90	35-90
	23-60	Cemented extremely gravelly material	---	---	0	0-10	---	---	---
320:									
Vistarobles sandy loam---------	0-5	Sandy loam	SC	A-2-6	0	0-15	75-95	70-90	40-85
	5-10	Sandy clay loam	SC	A-6	0	0-15	75-95	70-90	40-85
	10-14	Gravelly clay	CL	A-7-6	0	0	65-100	60-100	55-10
	14-34	Cemented gravelly material	SM	A-1-b	0	10-75	---	---	---
	34-40	Very cobbly sandy loam	SC	A-2-4	0	0-40	30-80	25-75	15-50
Redding loam----------	0-4	Loam	CL	A-6	0	0	75-95	70-90	40-85
	4-11	Loam	CL	A-6	0	0	75-95	70-90	40-85
	11-24	Loam	CL	A-6	0	0-10	60-100	55-100	35-95
	24-35	Clay	CH	A-7-6	0	0-30	55-100	50-100	45-10
	35-40	Cemented very gravelly material	---	---	0	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
321:									
Durixeralfs, fine-loamy, gravelly fine sandy loam------	0-1	Gravelly fine sandy loam	SC	A-2-4	0	0	65-95	60-90	35-85
	1-5	Gravelly fine sandy loam	GC	A-2-6	0	0	60-95	55-90	40-90
	5-10	Gravelly loam	GC	A-6	0	0	60-95	55-90	40-90
	10-18	Gravelly loam	GC	A-6	0	0	60-95	55-90	40-90
	18-24	Very gravelly clay loam	GC	A-6	0	0-40	55-100	50-100	40-10
	24-27	Very gravelly sandy clay	GC	A-2-7	0	0-40	40-100	35-100	30-10
	27	Cemented very gravelly material	---	---	0	0-15	---	---	---
Durixeralfs, loamy-skeletal, gravelly fine sandy loam------	0-1	Gravelly fine sandy loam	SC-SM	A-2-4	0	0	65-90	60-85	40-80
	1-4	Gravelly loam	SC	A-6	0	5-10	45-75	40-70	35-70
	4-9	Very cobbly clay loam	CL	A-6	0	5-45	45-75	40-70	35-70
	9	Cemented very gravelly material	---	---	0	0-20	---	---	---
Typic Petraquepts silty clay---	0-3	Silty clay	CH	A-7-6	0	0-10	80-100	75-100	65-10
	3-11	Gravelly silty clay	GC	A-7-6	0	0-10	55-80	50-75	45-75
	11	Very gravelly cemented material	---	---	0	---	---	---	---
330:									
Wilsoncreek loam, occasionally flooded----------	0-7	Loam	CL	A-4	0	0	100	100	85-10
	7-14	Loam	CL	A-4	0	0	100	100	85-10
	14-25	Loam	CL	A-6	0	0	100	100	85-10
	25-34	Loam	CL	A-6	0	0	100	100	85-10
	34-44	Loam	CL	A-6	0	0	100	100	85-10
	44-60	Loam	CL	A-6	0	0	100	100	85-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
330:									
Trainer loam, occasionally flooded	0-7	Loam	CL	A-6	0	0	100	100	85-95
	7-13	Loam	CL	A-6	0	0	100	100	80-95
	13-26	Loam	CL	A-6	0	0	100	100	80-95
	26-36	Loam	CL	A-6	0	0	100	100	80-95
	36-46	Fine sandy loam, sandy loam	SC	A-4	0	0	100	100	70-95
	46-61	Sandy loam	SC-SM	A-2-4	0	0	100	100	60-70
331:									
Thompsonflat loam	0-2	Loam	CL-ML	A-4	0	0	65-100	60-100	35-95
	2-5	Gravelly loam	GC	A-6	0-10	0-25	65-100	60-100	50-95
	5-12	Gravelly loam	CL	A-6	0-10	0-25	75-100	70-100	50-95
	12-19	Gravelly loam	CL	A-6	0-10	0-25	75-100	70-100	50-95
	19-29	Gravelly clay loam	CL	A-6	0-10	0-25	75-100	70-100	50-95
	29-35	Very gravelly clay	GC	A-2-7	0	0-15	25-100	20-100	10-10
	35-43	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-40	25-85	20-85	10-80
	43-80	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-40	25-85	20-85	10-80
335:									
Galt clay loam	0-6	Clay loam	CL	A-7-6	0	0	100	100	90-10
	6-20	Clay loam	CH	A-7-6	0	0	100	100	90-10
	20-27	Clay	CH	A-7-6	0	0	100	100	90-10
	27-30	Clay	CH	A-7-6	0	0	100	100	90-10
	30	Cemented material	---	---	---	---	---	---	---
336:									
Galt clay	0-3	Clay	CH	A-7-6	0	0-10	65-100	60-100	55-10
	3-13	Clay	CH	A-7-6	0	0-10	65-100	60-100	55-10
	13-29	Clay	CH	A-7-6	0	0-25	60-100	55-100	50-10
	29-32	Clay	CH	A-7-6	0	0	65-100	60-100	55-10
	32-39	Cemented material	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
337:									
Galt clay loam----------	0-6	Clay loam	CL	A-7-6	0	0	100	100	90-10
	6-20	Clay loam	CH	A-7-6	0	0	100	100	90-10
	20-27	Clay	CH	A-7-6	0	0	100	100	90-10
	27-30	Clay	CH	A-7-6	0	0	100	100	90-10
	30	Cemented material	---	---	---	---	---	---	---
338:									
Oxyaquic Xerofluvents silt loam	0-6	Silt loam	CL	A-6	0	0	100	100	90-10
	6-20	Silt loam	CL	A-6	0	0	100	100	90-10
	20-32	Loamy sand	SM	A-2-4	0	0	100	100	50-75
	32-36	Loamy fine sand	SM	A-2-4	0	0	100	100	50-75
	36-46	Coarse sand	SP-SM	A-2-4	0	0	100	100	50-70
	46-50	Silt loam	CL	A-4	0	0	100	100	90-10
	50-55	Loamy fine sand	SM	A-2-4	0	0	100	100	50-75
	55-60	Silt loam	CL	A-6	0	0	100	100	90-10
339:									
Oxyaquic Xerofluvents sandy loam, frequently flooded------	0-8	Sandy loam	SC	A-2-4	0	0	100	100	60-70
	8-12	Sandy loam	SM	A-2-4	0	0	100	100	60-70
	12-16	Fine sandy loam	SM	A-4	0	0	100	100	70-85
	16-60	Stratified sandy loam to gravelly sand	---	---	0	0	65-100	60-100	30-70
340:									
Rock outcrop, Lovejoy basalt.									
Thermalrocks very gravelly loam	0-1	Very gravelly loam	ML	A-5	0	10-55	30-90	25-85	20-80
	1-5	Very gravelly loam	GM	A-2-7	0	15-99	6-90	1-85	1-80
	5	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
340:									
Campbellhills gravelly loam----	0-2	Gravelly loam	ML	A-4	0	0-25	75-90	70-85	60-80
	2-7	Gravelly loam	GM	A-6	0	0-55	60-90	55-85	40-80
	7-17	Very gravelly clay loam	GC	A-7-6	0	0-65	30-90	25-85	20-80
	17-29	Very gravelly clay loam	GC	A-2-7	0	0-65	30-90	25-85	20-80
	29-39	Extremely gravelly clay loam	GC	A-2-7	0	0-65	30-90	25-85	20-80
	39-50	Extremely gravelly clay loam	GC	A-2-7	0	0-65	30-90	25-85	20-80
	50	Bedrock	---	---	---	---	---	---	---
341:									
Elsey loam----------	0-3	Loam	ML	A-4	0	0-10	80-95	75-90	60-85
	3-8	Gravelly loam	ML	A-6	0	0-15	75-95	70-90	60-85
	8-17	Cobbly loam	CL	A-6	0	10-30	75-95	70-90	60-85
	17-25	Cobbly loam	CL	A-6	0	10-30	75-95	70-90	60-85
	25-32	Very cobbly loam	CL	A-6	0	15-55	65-95	60-90	50-90
	32-38	Very cobbly loam	CL	A-6	0	15-55	65-95	60-90	50-90
	38	Bedrock	---	---	---	---	---	---	---
Beatsonhollow gravelly loam----	0-3	Gravelly loam	ML	A-7-5	0	0-30	65-90	60-85	50-80
	3-10	Cobbly loam	ML	A-7-6	0	0-30	65-90	60-85	50-80
	10-17	Very cobbly loam	CL	A-6	0	10-60	60-90	55-85	40-80
	17	Bedrock	---	---	---	---	---	---	---
Campbellhills gravelly loam----	0-2	Gravelly loam	ML	A-4	0	0-25	75-90	70-85	60-80
	2-7	Gravelly loam	GM	A-6	0	0-55	60-90	55-85	40-80
	7-17	Very gravelly clay loam	GC	A-7-6	0	0-65	30-90	25-85	20-80
	17-29	Very gravelly clay loam	GC	A-2-7	0	0-65	30-90	25-85	20-80
	29-39	Extremely gravelly clay loam	GC	A-2-7	0	0-65	30-90	25-85	20-80
	39-50	Extremely gravelly clay loam	GC	A-2-7	0	0-65	30-90	25-85	20-80
	50	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
341:									
Rock outcrop, Lovejoy basalt.									
342:									
Thermalrocks very gravelly loam	0-1	Very gravelly loam	ML	A-5	0	10-55	30-90	25-85	20-80
	1-5	Very gravelly loam	GM	A-2-7	0	15-99	6-90	1-85	1-80
	5	Bedrock	---	---	---	---	---	---	---
Beatsonhollow taxadjunct fine sandy loam----------	0-1	Fine sandy loam	SM	A-4	0	0	75-95	70-90	50-85
	1-6	Gravelly loam	SM	A-6	0	0	55-95	50-90	40-85
	6-10	Gravelly loam	SC	A-6	0	0	55-95	50-90	40-85
	10-15	Gravelly loam	SC	A-6	0	0	55-95	50-90	40-85
	15-18	Very gravelly loam	GC	A-2-6	0	0	50-95	45-90	40-85
	18	Bedrock	---	---	---	---	---	---	---
Rock outcrop, Lovejoy basalt.									
343:									
Coalcanyon very cobbly loam----	0-2	Very cobbly loam	MH	A-5	0-75	10-50	35-90	30-85	25-80
	2-11	Very cobbly loam	ML	A-7-5	0-80	10-55	40-80	35-75	30-70
	11-27	Very cobbly loam	CL	A-6	0-85	10-65	15-75	10-70	5-70
	27-43	Very cobbly loam	GC	A-6	0-85	10-65	15-75	10-70	5-70
	43-65	Extremely cobbly clay loam	CL	A-7-6	0-85	10-65	15-75	10-70	5-70

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
343:									
Coonhollow gravelly loam-------	0-3	Gravelly loam	MH	A-5	0-75	10-50	35-90	30-85	25-80
	3-11	Very cobbly loam	ML	A-7-5	0-80	10-55	40-90	35-85	30-70
	11-22	Very cobbly loam	CL	A-6	0-85	10-75	15-80	10-75	5-70
	22-32	Extremely cobbly loam	CL	A-6	0-85	10-75	15-80	10-75	5-70
	32-45	Extremely cobbly clay loam	CL	A-7-6	0-85	10-75	15-80	10-75	5-70
	45-50	Weathered bedrock	---	---	---	---	---	---	---
	50	Bedrock	---	---	---	---	---	---	---
344:									
Coalcanyon very cobbly loam----	0-2	Very cobbly loam	MH	A-5	0-75	10-50	35-90	30-85	25-80
	2-11	Very cobbly loam	ML	A-7-5	0-80	10-55	40-80	35-75	30-70
	11-27	Very cobbly loam	CL	A-6	0-85	10-65	15-75	10-70	5-70
	27-43	Very cobbly loam	GC	A-6	0-85	10-65	15-75	10-70	5-70
	43-65	Extremely cobbly clay loam	CL	A-7-6	0-85	10-65	15-75	10-70	5-70
Coonhollow gravelly loam-------	0-3	Gravelly loam	MH	A-5	0-75	10-50	35-90	30-85	25-80
	3-11	Very cobbly loam	ML	A-7-5	0-80	10-55	40-90	35-85	30-70
	11-22	Very cobbly loam	CL	A-6	0-85	10-75	15-80	10-75	5-70
	22-32	Extremely cobbly loam	CL	A-6	0-85	10-75	15-80	10-75	5-70
	32-45	Extremely cobbly clay loam	CL	A-7-6	0-85	10-75	15-80	10-75	5-70
	45-50	Weathered bedrock	---	---	---	---	---	---	---
	50	Bedrock	---	---	---	---	---	---	---
Rock outcrop, Lovejoy basalt.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
346:									
Cherotable loam----------	0-2	Loam	MH	A-7-5	0	0-15	75-100	70-100	60-95
	2-8	Loam	CL	A-7-6	0	0-45	75-100	70-100	60-10
	8-14	Clay loam	CL	A-7-6	0	0-45	75-100	70-100	60-10
	14-21	Gravelly clay loam	CL	A-7-6	0	0-45	75-100	70-100	60-10
	21-30	Cobbly clay loam	CL	A-7-6	0	0-45	75-100	70-100	60-10
	30-45	Very cobbly clay	CH	A-7-6	0	10-55	60-90	55-85	50-85
	45	Bedrock	---	---	---	---	---	---	---
Elsey loam----------	0-3	Loam	CL-ML	A-4	0	0-10	80-95	75-90	60-85
	3-8	Gravelly loam	CL-ML	A-4	0	0-15	75-95	70-90	60-85
	8-17	Cobbly loam	ML	A-4	0	10-30	75-95	70-90	60-85
	17-25	Cobbly loam	ML	A-4	0	10-30	75-95	70-90	60-85
	25-32	Very cobbly loam	ML	A-4	0	15-55	65-95	60-90	50-90
	32-38	Very cobbly loam	ML	A-4	0	15-55	65-95	60-90	50-90
	38	Bedrock	---	---	---	---	---	---	---
347:									
Haplic Palexeralfs loam--------	0-3	Loam	CL	A-6	0	0-15	50-90	45-85	30-80
	3-9	Very gravelly loam	GC	A-2-6	0	10-30	30-65	25-60	20-60
	9-22	Very gravelly clay loam	GC	A-2-6	0	10-30	30-65	25-60	25-60
	22-31	Extremely gravelly sandy clay	GC	A-2-7	0	0-40	35-55	30-50	25-50
	31-45	Extremely gravelly sandy clay loam	SC	A-2-7	0-40	15-55	35-65	30-60	25-50
	45-52	Extremely gravelly sandy clay	GC	A-2-7	0-40	15-55	35-55	30-50	25-50
	52-64	Extremely cobbly sandy clay	SC	A-2-7	0-30	45-55	35-65	35-60	25-60

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
353:									
Cherokeespring gravelly silt loam----------	0-3	Gravelly silt loam	MH	A-7-5	0	0-10	80-95	75-90	75-90
	3-7	Gravelly silt loam	CL	A-7-5	0	0-45	65-90	60-85	55-85
	7-16	Gravelly silty clay loam	CL	A-7-6	0	0-45	65-90	60-85	55-85
	16-30	Gravelly silty clay loam	CL	A-7-6	0	0-45	60-90	55-85	50-85
	30-42	Gravelly silty clay loam	CL	A-7-6	0	0-45	60-90	55-85	50-85
	42-60	Very gravelly silty clay	CH	A-7-6	0	0-55	50-90	45-85	40-85
	60-68	Very gravelly silty clay	CH	A-7-6	0	0-55	50-90	45-85	40-85
355:									
Coalcanyon very cobbly loam----	0-2	Very cobbly loam	MH	A-5	0-75	10-50	35-90	30-85	25-80
	2-11	Very cobbly loam	ML	A-7-5	0-80	10-55	40-80	35-75	30-70
	11-27	Very cobbly loam	CL	A-6	0-85	10-65	15-75	10-70	5-70
	27-43	Very cobbly loam	GC	A-6	0-85	10-65	15-75	10-70	5-70
	43-65	Extremely cobbly clay loam	CL	A-7-6	0-85	10-65	15-75	10-70	5-70
Talus.									
356:									
Coalcanyon very cobbly loam----	0-2	Very cobbly loam	MH	A-5	0-75	10-50	35-90	30-85	25-80
	2-11	Very cobbly loam	ML	A-7-5	0-80	10-55	40-80	35-75	30-70
	11-27	Very cobbly loam	CL	A-6	0-85	10-65	15-75	10-70	5-70
	27-43	Very cobbly loam	GC	A-6	0-85	10-65	15-75	10-70	5-70
	43-65	Extremely cobbly clay loam	CL	A-7-6	0-85	10-65	15-75	10-70	5-70

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
356:									
Rock outcrop, basalt cliffs.									
Talus.									
Coonhollow gravelly loam-------	0-3	Gravelly loam	MH	A-5	0-75	10-50	35-90	30-85	25-80
	3-11	Very cobbly loam	ML	A-7-5	0-80	10-55	40-90	35-85	30-70
	11-22	Very cobbly loam	CL	A-6	0-85	10-75	15-80	10-75	5-70
	22-32	Extremely cobbly loam	CL	A-6	0-85	10-75	15-80	10-75	5-70
	32-45	Extremely cobbly clay loam	CL	A-7-6	0-85	10-75	15-80	10-75	5-70
	45-50	Weathered bedrock	---	---	---	---	---	---	---
	50	Bedrock	---	---	---	---	---	---	---
360:									
Typic Xerofluvents, coarse-loamy--------------------------	0-3	Gravelly loamy sand	SC-SM	A-1-b	0	0	65-100	60-100	30-85
	3-11	Gravelly coarse sandy loam	SC-SM	A-1-b	0	0	55-95	50-90	25-90
	11-20	Gravelly coarse sandy loam	SC-SM	A-2-4	0	0	55-95	50-90	25-90
	20-24	Sand	SW-SM	A-3	0	0	55-95	50-90	25-90
	24-31	Gravelly sand	SP-SM	A-1-b	0	0	55-95	50-90	25-90
	31-45	Silt loam	CL	A-4	0	0	55-95	50-90	25-90
	45-51	Gravelly sand	SP-SM	A-1-b	0	0	25-95	20-90	10-90
	51-66	Silt	CL-ML	A-4	0	0	25-95	20-90	10-90
	66-84	Very gravelly coarse sand	GP-GM	A-1-a	0	0	25-95	20-90	10-90
	84-95	Extremely gravelly coarse sand	GP-GM	A-1-a	0	0	25-95	20-90	10-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passi sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
360:									
Typic Xerofluvents, sandy-skeletal	0-3	Gravelly loamy coarse sand	SP-SM	A-1-b	0	0	60-90	55-85	30-80
	3-9	Very gravelly loamy coarse sand	GP-GM	A-1-a	0	0	15-75	10-70	5-60
	9-16	Very gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30
	16-22	Very gravelly coarse sand	GW	A-1-a	0	0	15-75	10-50	5-30
	22-30	Very gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30
	30-40	Very gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30
	40-50	Gravelly sand	SP-SM	A-1-a	0	0	15-75	10-50	5-30
	50-98	Extremely gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30
361:									
Typic Xerofluvents, sandy-skeletal	0-3	Gravelly loamy coarse sand	SP-SM	A-1-b	0	0	60-90	55-85	30-80
	3-9	Very gravelly loamy coarse sand	GP-GM	A-1-a	0	0	15-75	10-70	5-60
	9-16	Very gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30
	16-22	Very gravelly coarse sand	GW	A-1-a	0	0	15-75	10-50	5-30
	22-30	Very gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30
	30-40	Very gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30
	40-50	Gravelly sand	SP-SM	A-1-a	0	0	15-75	10-50	5-30
	50-98	Extremely gravelly coarse sand	GP-GM	A-1-a	0	0	15-75	10-50	5-30

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
362:									
Ultic Haploxeralfs, sandstone, low elevation, very deep------	0-2	Sandy loam	SC	A-2-4	0	0	90-100	85-100	50-95
	2-8	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-10
	8-18	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-10
	18-28	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-10
	28-39	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-10
	39-49	Sandy clay loam	CL	A-6	0	0	80-100	75-100	60-10
	49-56	Sandy clay loam	SC	A-2-6	0	0	95-100	90-100	55-90
	56-70	Sandy loam	SC	A-4	0	0	95-100	90-100	55-90
Ultic Haploxeralfs, sandstone, low elevation, deep----------	0-3	Fine sandy loam	CL	A-4	0	0	90-100	85-100	50-95
	3-8	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-95
	8-15	Sandy clay loam	SC	A-6	0	0	75-100	70-100	55-95
	15-24	Fine sandy loam	CL-ML	A-4	0	0	80-100	75-100	55-95
	24-32	Loam	CL	A-4	0	0	80-100	75-100	55-95
	32-41	Very fine sandy loam	CL-ML	A-4	0	0	80-100	75-100	55-95
	41	Bedrock	---	---	---	---	---	---	---
363:									
Ultic Haploxeralfs, sandstone, low elevation, very deep------	0-2	Sandy loam	SC	A-2-4	0	0	90-100	85-100	50-95
	2-8	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-10
	8-18	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-10
	18-28	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-10
	28-39	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-10
	39-49	Sandy clay loam	CL	A-6	0	0	80-100	75-100	60-10
	49-56	Sandy clay loam	SC	A-2-6	0	0	95-100	90-100	55-90
	56-70	Sandy loam	SC	A-4	0	0	95-100	90-100	55-90
Ultic Haploxeralfs, sandstone, low elevation, deep----------	0-3	Fine sandy loam	CL	A-4	0	0	90-100	85-100	50-95
	3-8	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-95
	8-15	Sandy clay loam	SC	A-6	0	0	75-100	70-100	55-95
	15-24	Fine sandy loam	CL-ML	A-4	0	0	80-100	75-100	55-95
	24-32	Loam	CL	A-4	0	0	80-100	75-100	55-95
	32-41	Very fine sandy loam	CL-ML	A-4	0	0	80-100	75-100	55-95
	41	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
364:									
Ultic Haploxeralfs, sandstone, low elevation, deep----------	0-3	Fine sandy loam	CL	A-4	0	0	90-100	85-100	50-95
	3-8	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-95
	8-15	Sandy clay loam	SC	A-6	0	0	75-100	70-100	55-95
	15-24	Fine sandy loam	CL-ML	A-4	0	0	80-100	75-100	55-95
	24-32	Loam	CL	A-4	0	0	80-100	75-100	55-95
	32-41	Very fine sandy loam	CL-ML	A-4	0	0	80-100	75-100	55-95
	41	Bedrock	---	---	---	---	---	---	---
Ultic Haploxeralfs, sandstone, low elevation, very deep------	0-2	Sandy loam	SC	A-2-4	0	0	90-100	85-100	50-95
	2-8	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-10
	8-18	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-10
	18-28	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-10
	28-39	Sandy clay loam	CL	A-6	0	0	75-100	70-100	55-10
	39-49	Sandy clay loam	CL	A-6	0	0	80-100	75-100	60-10
	49-56	Sandy clay loam	SC	A-2-6	0	0	95-100	90-100	55-90
	56-70	Sandy loam	SC	A-4	0	0	95-100	90-100	55-90
365:									
Palexerults gravelly loam------	0-2	Gravelly loam	CL	A-6	0	0-15	75-100	70-100	60-10
	2-12	Gravelly loam	GC	A-6	0	0-10	60-100	55-100	40-10
	12-20	Clay loam	CL	A-7-6	0	0-10	60-100	55-100	40-10
	20-29	Silty clay	CH	A-7-6	0	0	60-100	55-100	50-10
	29-46	Silty clay	CH	A-7-6	0	0	60-100	55-100	45-10
	46-65	Silty clay	CH	A-7-6	0	0	95-100	90-100	80-10
	65	Bedrock	---	---	---	---	---	---	---
366:									
Palexerults gravelly loam------	0-2	Gravelly loam	CL	A-6	0	0-15	75-100	70-100	60-10
	2-12	Gravelly loam	GC	A-6	0	0-10	60-100	55-100	40-10
	12-20	Clay loam	CL	A-7-6	0	0-10	60-100	55-100	40-10
	20-29	Silty clay	CH	A-7-6	0	0	60-100	55-100	50-10
	29-46	Silty clay	CH	A-7-6	0	0	60-100	55-100	45-10
	46-65	Silty clay	CH	A-7-6	0	0	95-100	90-100	80-10
	65	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
370:									
Palexerults gravelly loam------	0-2	Gravelly loam	CL	A-6	0	0-15	75-100	70-100	60-10
	2-12	Gravelly loam	GC	A-6	0	0-10	60-100	55-100	40-10
	12-20	Clay loam	CL	A-7-6	0	0-10	60-100	55-100	40-10
	20-29	Silty clay	CH	A-7-6	0	0	60-100	55-100	50-10
	29-46	Silty clay	CH	A-7-6	0	0	60-100	55-100	45-10
	46-65	Silty clay	CH	A-7-6	0	0	95-100	90-100	80-10
	65	Bedrock	---	---	---	---	---	---	---
375:									
Wickscorner loam---------------	0-2	Loam	CL	A-6	0	0	90-100	85-100	60-95
	2-8	Loam	CL	A-6	0	0-10	55-95	50-90	40-90
	8-22	Gravelly clay loam	GC	A-5	0	0-10	55-95	50-90	40-90
	22-38	Very gravelly clay loam	GC	A-7-5	0	0-15	30-100	25-96	20-96
	38-59	Very gravelly clay	GC	A-2-7	0	0-15	30-100	25-96	20-96
	59-72	Extremely gravelly sandy clay	GC	A-2-7	0-4	0-60	30-55	25-50	20-50
	72-84	Extremely gravelly sandy clay	GC	A-2-7	0-4	0-60	30-55	25-50	20-50
376:									
Flagcanyon gravelly loam-------	0-3	Gravelly loam	ML	A-6	0	0-15	75-100	70-100	50-95
	3-9	Very gravelly loam	GC	A-7-6	0	0-45	30-80	25-75	20-75
	9-14	Very gravelly loam	GC	A-2-7	0	0-45	30-80	25-75	20-75
	14-30	Very gravelly clay loam	GC	A-7-6	0	0-30	30-50	25-45	20-45
	30-53	Extremely gravelly sandy clay loam	GC	A-2-7	0	30-55	30-45	25-40	20-40
	53-65	Extremely gravelly sandy clay	GC	A-2-7	0	30-55	30-45	25-40	20-40

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
376:									
Wickscorner loam----------	0-2	Loam	CL	A-6	0	0	90-100	85-100	60-95
	2-8	Loam	CL	A-6	0	0-10	55-95	50-90	40-90
	8-22	Gravelly clay loam	GC	A-5	0	0-10	55-95	50-90	40-90
	22-38	Very gravelly clay loam	GC	A-7-5	0	0-15	30-100	25-96	20-96
	38-59	Very gravelly clay	GC	A-2-7	0	0-15	30-100	25-96	20-96
	59-72	Extremely gravelly sandy clay	GC	A-2-7	0-4	0-60	30-55	25-50	20-50
	72-84	Extremely gravelly sandy clay	GC	A-2-7	0-4	0-60	30-55	25-50	20-50
377:									
Flagcanyon taxadjunct fine sandy loam----------	0-3	Fine sandy loam	SC	A-6	0	0	75-95	70-90	50-85
	3-7	Loam	CL	A-6	0	0	60-95	55-90	40-90
	7-16	Clay loam	CL	A-6	0	0	60-95	55-90	40-90
	16-23	Very gravelly clay	GC	A-2-7	0	0-30	30-45	25-40	20-40
	23-31	Extremely gravelly clay	GC	A-2-7	0	0-30	30-45	25-40	20-40
	31-63	Cemented extremely gravelly sand	GW	A-1-a	0	15-30	30	25	10-15
Durixeralfs, clayey-skeletal, loam----------	0-1	Loam	CL	A-6	0	0-15	60-100	55-100	40-95
	1-4	Clay loam	CL	A-7-6	0	0-25	65-90	60-85	50-80
	4-9	Very gravelly clay	GC	A-2-7	0	0-15	30-60	25-55	20-55
	9-15	Very gravelly clay	GC	A-2-7	0	0-15	30-60	25-55	20-55
	15-60	Cemented extremely gravelly sand	GP-GC	A-1-a	0	30-55	40-65	35-60	20-50

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
377:									
Duraquerts gravelly clay-------	0-3	Gravelly clay	CH	A-7-6	0	0-5	75-95	70-90	65-90
	3-6	Gravelly silty clay	CH	A-7-6	0	0-5	75-95	70-90	65-90
	6-15	Silty clay	CH	A-7-6	0	0-5	90-95	85-90	75-90
	15-21	Silty clay	CH	A-7-6	0	0-5	90-95	85-90	75-90
	21-23	Very gravelly silty clay	GC	A-2-7	0	0-15	40-75	35-70	30-70
	23-60	Cemented very gravelly sandy loam	GP-GC	A-1-a	0	0-15	30-40	25-35	15-25
400:									
Subaco taxadjunct clay---------	0-8	Clay	CH	A-5	0	0	100	100	90-10
	8-16	Silty clay	CH	A-6	0	0	100	100	90-10
	16-29	Silty clay	CH	A-6	0	0	100	100	90-10
	29-35	Clay	CH	A-6	0	0	100	100	90-10
	35-42	Cemented silty clay loam			0	0	---	---	---
	42-60	Sandy loam	CL-ML	A-4	0	0	100	100	90-10
415:									
Ignord fine sandy loam---------	0-4	Fine sandy loam	CL-ML	A-4	0	0	100	100	70-85
	4-14	Fine sandy loam	CL-ML	A-4	0	0	100	100	60-85
	14-25	Sandy loam	SC-SM	A-4	0	0	100	100	60-85
	25-32	Fine sandy loam	CL-ML	A-4	0	0	100	100	60-85
	32-53	Sandy loam	SC-SM	A-4	0	0	100	100	60-85
	53-58	Fine sandy loam	CL-ML	A-4	0	0	100	100	60-85
	58-77	Fine sandy loam	CL-ML	A-4	0	0	100	100	60-85
416:									
Calcic Haploxerolls sandy loam	0-5	Sandy loam	SM	A-2-4	0	0	100	100	60-95
	5-17	Sandy loam	SM	A-2-4	0	0	100	100	60-95
	17-20	Sandy loam	SM	A-2-4	0	0	100	100	60-95
	20-33	Sandy loam	SM	A-2-4	0	0	100	100	60-95
	33-44	Sandy loam	SM	A-2-4	0	0	100	100	50-70
	44-72	Dense material	CL	A-6	0	0	100	100	70-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
418:									
Almendra loam----------	0-4	Loam	ML	A-7-6	0	0	95-100	90-100	65-95
	4-14	Loam	CL	A-7-6	0	0	95-100	90-100	65-95
	14-29	Loam	CL	A-6	0	0	95-100	90-100	65-95
	29-40	Loam	CL	A-6	0	0	95-100	90-100	65-95
	40-52	Loam	CL	A-4	0	0	95-100	90-100	65-95
	52-74	Very fine sandy loam	CL	A-4	0	0	95-100	90-100	55-95
	74-86	Very fine sandy loam	CL	A-4	0	0	95-100	90-100	55-95
419:									
Conejo fine sandy loam, overwash----------	0-17	Fine sandy loam	CL	A-4	0	0	95-100	90-100	65-95
	17-35	Clay loam	CL	A-7-6	0	0	95-100	90-100	75-10
	35-45	Clay loam	CL	A-7-6	0	0	95-100	90-100	75-10
	45-56	Clay loam	CL	A-7-6	0	0	95-100	90-100	75-10
	56-62	Loam	CL	A-6	0	0	95-100	90-100	55-10
	62-70	Loam	CL	A-6	0	0	95-100	90-100	55-10
	70-72	Loam	CL	A-6	0	0	95-100	90-100	55-10
420:									
Conejo clay loam----------	0-5	Clay loam	MH	A-7-5	0	0	99-100	96-100	85-10
	5-19	Clay loam	CL	A-7-6	0	0	99-100	96-100	85-10
	19-30	Clay loam	CL	A-7-6	0	0	99-100	96-100	85-10
	30-48	Clay loam	CL	A-7-6	0	0	99-100	96-100	85-10
	48-70	Sandy loam	SC	A-6	0	0	99-100	96-100	70-10
425:									
Vina fine sandy loam----------	0-3	Fine sandy loam	ML	A-4	0	0	95-100	90-100	65-95
	3-11	Fine sandy loam	CL	A-4	0	0	95-100	90-100	65-95
	11-23	Sandy loam	SC	A-4	0	0	95-100	90-100	55-95
	23-37	Sandy loam	SC-SM	A-2-4	0	0	95-100	90-100	55-95
	37-50	Sandy loam	SM	A-2-4	0	0	95-100	90-100	45-95
	50-54	Loamy coarse sand	SM	A-2-4	0	0	95-100	90-100	45-95
	54-80	Coarse sand	SM	A-2-4	0	0	95-100	90-100	45-95
426:									
Vina loam----------	0-4	Loam	ML	A-4	0	0	95-100	90-100	75-95
	4-15	Loam	CL	A-4	0	0	95-100	90-100	55-95
	15-28	Loam	CL-ML	A-4	0	0	95-100	90-100	55-95
	28-44	Loam	CL	A-4	0	0	95-100	90-100	55-95
	44-63	Loam	CL	A-4	0	0	95-100	90-100	55-95
	63-72	Loam	CL	A-6	0	0	95-100	90-100	55-95

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
439:									
Oxyaquic Xerofluvents clay-----	0-10	Clay	CH	A-7-6	0	0	100	100	90-10
	10-13	Silty clay	CH	A-7-6	0	0	100	100	95-10
	13-21	Silty clay	CH	A-7-6	0	0	100	100	95-10
	21-27	Silt loam	CL-ML	A-4	0	0	100	100	90-10
	27-32	Silty clay	CH	A-7-6	0	0	100	100	95-10
	32-37	Silty clay loam	CL	A-7-6	0	0	100	100	95-10
	37-55	Clay	CH	A-7-5	0	0	100	100	90-10
	55-63	Clay	CH	A-7-6	0	0	100	100	90-10
	63-65	Cemented material	---	---	0	0	---	---	---
	65-80	Clay	CH	A-7-6	0	0	100	100	90-10
440:									
Oxyaquic Xerofluvents silt loam, frequently flooded------	0-9	Stratified silt loam to very fine sandy loam	CL	A-4	0	0	100	100	85-10
	9-18	Fine sand	SC-SM	A-2-4	0	0	100	100	65-80
	18-25	Stratified silt loam to very fine sandy loam	CL-ML	A-4	0	0	100	100	85-10
	25-33	Stratified silt loam to fine sand	CL	A-4	0	0	100	100	65-10
	33-44	Stratified silty clay loam to loam	CL	A-6	0	0	100	100	85-10
	44-51	Stratified silt loam to silty clay loam	CL	A-6	0	0	100	100	90-10
	51-60	Clay	CH	A-7-6	0	0	100	100	90-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
441:									
Oxyaquic Xerofluvents very fine sandy loam	0-6	Very fine sandy loam	CL	A-6	0	0	100	100	85-95
	6-20	Silt loam	CL	A-6	0	0	100	100	90-10
	20-30	Silt loam	CL	A-6	0	0	100	100	90-10
	30-43	Stratified loamy fine sand to silt loam	CL	A-6	0	0	100	100	85-10
	43-55	Silt loam	CL	A-6	0	0	100	100	90-10
	55-72	Stratified loamy fine sand to silt loam			0	0	100	100	50-10
	72-75	Clay	CL	A-7-6	0	0	100	100	90-10
442:									
Durixerolls clay loam	0-6	Clay loam	CH	A-7-6	0	0	80-100	75-100	65-10
	6-12	Clay loam	CL	A-7-6	0	0	90-100	85-100	75-10
	12-24	Clay loam	CL	A-7-6	0	0	90-100	85-100	70-10
	24-33	Clay loam	CL	A-7-6	0	0	90-100	85-100	50-10
	33	Cemented material	---	---	0	0	---	---	---
Haploxerolls clay loam	0-5	Clay loam	CL	A-7-6	0	0	100	100	90-10
	5-18	Clay loam	CL	A-7-6	0	0	100	100	90-10
	18-29	Loam	CL	A-6	0	0	95-100	90-100	75-10
	29-44	Loam	CL	A-6	0	0	95-100	90-100	75-10
	44-57	Loam	CL	A-6	0	0	90-100	85-100	25-10
	57	Cemented material	---	---	0	0	---	---	---
443:									
Durixerolls loam	0-4	Loam	CL	A-6	0	0	100	100	85-95
	4-10	Loam	CL	A-6	0	0	100	100	85-95
	10-17	Loam	CL	A-6	0	0	95-100	90-100	75-95
	17-23	Loam	CL	A-6	0	0	95-100	90-100	75-10
	23-26	Loam	CL	A-6	0	0	95-100	90-100	75-10
	26	Cemented material	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
443:									
Haploxerolls loam	0-5	Loam	ML	A-7-6	0	0	100	95-100	80-95
	5-16	Loam	CL	A-7-6	0	0	100	95-100	80-95
	16-27	Loam	CL	A-6	0	0	100	95-100	80-95
	27-40	Loam	CL	A-6	0	0	100	95-100	60-95
	40-48	Loam	CL	A-6	0	0	100	90-100	55-95
	48-52	Sandy loam	SC	A-2-4	0	0	100	90-100	55-95
	52	Cemented material	---	---	0	0	---	---	---
445:									
Chico loam	0-5	Loam	CL	A-6	0	0	100	100	85-95
	5-10	Clay loam	CL	A-7-6	0	0	100	100	85-10
	10-21	Clay loam	CL	A-7-6	0	0	100	100	85-10
	21-32	Clay loam	CL	A-7-6	0	0	100	100	85-10
	32-50	Loam	CL	A-6	0	0	100	100	85-10
	50-70	Loam	CL	A-6	0	0	100	100	85-10
	70-80	Loam	CL	A-6	0	0	100	100	85-10
447:									
Charger fine sandy loam	0-3	Fine sandy loam	ML	A-4	0	0	80-100	75-100	55-85
	3-7	Fine sandy loam	CL	A-4	0	0	80-100	75-100	40-85
	7-15	Fine sandy loam	CL	A-4	0	0	80-100	75-100	40-85
	15-32	Sandy loam	SC	A-2-4	0	0	55-100	50-100	30-85
	32-42	Sandy loam	SC	A-4	0	0-10	55-100	50-100	30-85
	42-53	Sandy loam	SC	A-4	0	0-10	55-100	50-100	30-85
	53-63	Sandy loam	SC-SM	A-4	0	0-10	55-100	50-100	30-85
	63-80	Extremely gravelly loamy coarse sand	GP-GM	A-1-a	0-25	10-50	25-75	20-70	15-50
448:									
Haploxerolls clay loam	0-5	Clay loam	CH	A-7-6	0	0	100	100	90-10
	5-10	Clay loam	CL	A-7-6	0	0	100	100	90-10
	10-24	Clay loam	CL	A-7-6	0	0	100	100	90-10
	24-39	Clay loam	CL	A-7-6	0	0	100	100	90-10
	39-66	Loam	CL	A-6	0	0	100	100	80-10
449:									
Haploxerolls loam	0-4	Loam	ML	A-7-6	0	0	100	100	85-95
	4-10	Loam	CL	A-6	0	0	100	100	85-10
	10-24	Loam	CL	A-6	0	0	100	100	80-95
	24-36	Loam	CL	A-6	0	0	100	100	80-95
	36-52	Loam	CL	A-6	0	0	100	100	80-95
	52-60	Sandy loam	SC	A-2-6	0	0	100	100	60-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passi sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
500:									
Lofgren clay	0-5	Clay	CH	A-7-5	0	0	100	100	90-100
	5-12	Clay	CH	A-7-5	0	0	100	100	90-100
	12-29	Clay	CH	A-7-6	0	0	100	100	90-100
	29-38	Clay	CH	A-7-6	0	0	100	100	90-100
	38-44	Clay	CH	A-7-6	0	0	100	100	90-100
	44-47	Clay loam	CL	A-6	0	0	100	100	90-100
	47-82	Cemented material	---	---	0	0	---	---	---
Blavo clay	0-5	Clay	CH	A-7-5	0	0	100	100	90-100
	5-16	Clay	CH	A-7-5	0	0	100	100	90-100
	16-24	Clay	CH	A-7-6	0	0	100	100	90-100
	24-30	Clay	CH	A-7-6	0	0	100	100	90-100
	30-36	Clay loam	CL	A-7-6	0	0	100	100	90-100
	36-60	Cemented material	---	---	0	0	---	---	---
501:									
Lofgren clay, occasionally flooded	0-5	Clay	CH	A-7-5	0	0	100	100	90-100
	5-12	Clay	CH	A-7-5	0	0	100	100	90-100
	12-22	Clay	CH	A-7-6	0	0	100	100	90-100
	22-30	Clay	CH	A-7-6	0	0	100	100	90-100
	30-41	Clay	CH	A-7-6	0	0	100	100	90-100
	41-45	Clay loam	CL	A-7-6	0	0	100	100	90-100
	45-60	Cemented material	---	---	0	0	---	---	---
Blavo clay, occasionally flooded	0-6	Clay	CH	A-7-5	0	0	100	100	90-100
	6-10	Clay	CH	A-7-5	0	0	100	100	90-100
	10-22	Clay	CH	A-7-6	0	0	100	100	90-100
	22-29	Clay	CH	A-7-6	0	0	100	100	90-100
	29-36	Clay loam	CL	A-7-6	0	0	100	100	90-100
	36-42	Cemented material	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
502:									
Blavo silt loam, overwash, occasionally flooded	0-7	Silt loam	CL	A-6	0	0	100	100	90-10
	7-14	Clay	CH	A-7-6	0	0	100	100	90-10
	14-22	Clay	CH	A-7-5	0	0	100	100	90-10
	22-29	Clay	CH	A-7-6	0	0	100	100	90-10
	29-36	Clay	CH	A-7-6	0	0	100	100	90-10
	36-50	Cemented material	---	---	0	0	---	---	---
519:									
Edjobe silty clay	0-8	Silty clay	CH	A-7-5	0	0	100	100	95-10
	8-25	Silty clay	CH	A-7-6	0	0	100	100	90-10
	25-32	Silty clay	CH	A-7-6	0	0	100	100	90-10
	32-48	Silty clay loam	CL	A-7-6	0	0	100	100	90-10
	48-60	Clay loam	CL	A-7-6	0	0	100	100	85-10
	60-69	Clay loam	CL	A-6	0	0	100	100	85-10
	69-75	Cemented material	---	---	0	0	---	---	---
520:									
Esquon clay	0-5	Clay	CH	A-7-6	0	0	100	100	90-10
	5-11	Clay	CH	A-7-6	0	0	100	100	90-10
	11-22	Clay	CH	A-7-6	0	0	100	100	90-10
	22-35	Clay	CH	A-7-6	0	0	100	100	90-10
	35-46	Clay	CH	A-7-6	0	0	100	100	90-10
	46-50	Silty clay	CH	A-7-6	0	0	100	100	90-10
	50-56	Silty clay	CL	A-6	0	0	100	100	90-10
	56-67	Cemented material	---	---	0	0	---	---	---
Neerdobe clay	0-5	Clay	CH	A-7-5	0	0	100	100	90-10
	5-15	Clay	CH	A-7-6	0	0	100	100	90-10
	15-23	Clay	CH	A-7-6	0	0	100	100	90-10
	23-28	Clay	CH	A-7-6	0	0	100	100	90-10
	28-33	Clay	CH	A-7-6	0	0	100	100	90-10
	33-38	Loam	CL	A-6	0	0	100	100	85-95
	38-56	Cemented material	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
521:									
Neerdobe silt loam, overwash---	0-7	Silt loam	CL	A-4	0	0	100	100	90-10
	7-16	Silt loam	CL	A-6	0	0	100	100	90-10
	16-20	Loamy very fine sand	ML	A-4	0	0	100	100	90-95
	20-33	Clay	CH	A-7-6	0	0	100	100	90-10
	33-47	Clay	CH	A-7-6	0	0	100	100	90-10
	47-52	Cemented very gravelly material	---	---	0	0	---	---	---
	52-60	Cemented loamy sand	---	---	0	0	---	---	---
522:									
Clear Lake silty clay loam, overwash----------	0-6	Silty clay loam	CH	A-7-6	0	0	100	100	95-10
	6-12	Silty clay	CH	A-7-6	0	0	100	100	90-10
	12-35	Silty clay	CH	A-7-6	0	0	100	100	90-10
	35-50	Silty clay	CH	A-7-6	0	0	100	100	90-10
	50-60	Silty clay	CH	A-7-6	0	0	100	100	90-10
	60-70	Silty clay	CH	A-7-6	0	0	100	100	90-10
	70-72	Silty clay	CH	A-7-6	0	0	100	100	90-10
523:									
Esquon silty clay loam, overwash----------	0-10	Silty clay loam	CL	A-7-6	0	0	100	100	95-10
	10-18	Silty clay	CH	A-7-6	0	0	100	100	95-10
	18-46	Silty clay	CH	A-7-6	0	0	100	100	95-10
	46-60	Cemented material	---	---	0	0	---	---	---
525:									
Govstanford loam----------	0-3	Loam	CL	A-6	0	0	100	100	60-95
	3-11	Loam	CL	A-6	0	0	100	100	60-95
	11-18	Sandy loam	SM	A-4	0	0	100	100	50-10
	18-25	Silt loam	CL	A-4	0	0	100	100	50-10
	25-34	Silt loam	CL-ML	A-7-5	0	0	100	100	50-10
	34-42	Clay	CH	A-7-6	0	0	100	100	90-10
	42-61	Silty clay	CH	A-7-6	0	0	100	100	90-10
	61-72	Silty clay	CH	A-7-6	0	0	100	100	90-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
526:									
Govstanford loam, occasionally flooded	0-3	Loam	CL	A-6	0	0	100	100	60-95
	3-11	Loam	CL	A-6	0	0	100	100	60-95
	11-18	Sandy loam	SM	A-4	0	0	100	100	50-10
	18-25	Silt loam	CL	A-4	0	0	100	100	50-10
	25-34	Silt loam	CL-ML	A-7-5	0	0	100	100	50-10
	34-42	Clay	CH	A-7-6	0	0	100	100	90-10
	42-61	Silty clay	CH	A-7-6	0	0	100	100	90-10
	61-72	Silty clay	CH	A-7-6	0	0	100	100	90-10
528:									
Neerdobe clay loam	0-10	Clay loam	CL	A-7-6	0	0	100	100	90-10
	10-18	Clay	CH	A-7-6	0	0	100	100	90-10
	18-25	Clay	CH	A-7-6	0	0	100	100	90-10
	25	Cemented material	---	---	0	0	---	---	---
550:									
Dunstone loam, dry	0-2	Loam	ML	A-4	0	0-10	60-100	55-100	40-95
	2-7	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	7-10	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	10-16	Loam	CL	A-6	0	0-10	45-100	40-100	35-95
	16	Bedrock	---	---	0	0	---	---	---
Loafercreek silt loam, dry	0-2	Silt loam	ML	A-7-5	0	0	75-100	70-100	60-95
	2-4	Silt loam	CL	A-4	0	0	75-100	70-100	60-95
	4-11	Loam	CL	A-4	0	0-10	90-100	85-100	70-95
	11-20	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	20-29	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	29	Bedrock	---	---	0	0	---	---	---
551:									
Dunstone loam, dry	0-2	Loam	ML	A-4	0	0-10	60-100	55-100	40-95
	2-7	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	7-10	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	10-16	Loam	CL	A-6	0	0-10	45-100	40-100	35-95
	16	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
551:									
Lomarica loam----------	0-1	Loam	ML	A-4	0	0-10	95-100	85-100	70-95
	1-5	Loam	ML	A-6	0	0-10	75-100	70-100	60-95
	5-9	Clay loam	CL	A-7-6	0	0-25	30-95	25-90	20-85
	9-12	Clay loam	CL	A-7-6	0	0-25	30-95	25-85	20-80
	12-25	Extremely gravelly clay loam	GC	A-2-7	0	0-25	30	25	20
	25-32	Extremely gravelly clay	GP-GC	A-2-7	0	0-25	15-95	10-90	5-85
	32	Bedrock	---	---	0	0	---	---	---
Argonaut taxadjunct loam-------	0-2	Loam	ML	A-6	0	0	90-95	85-90	70-85
	2-8	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85
	8-14	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95
	14-20	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95
	20-26	Clay	CH	A-7-6	0	0	90-95	85-90	75-85
	26-30	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85
	30	Bedrock	---	---	0	0	---	---	---
552:									
Dunstone gravelly loam---------	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	15-37	Weathered bedrock	---	---	0	0	---	---	---
	37	Bedrock	---	---	0	0	---	---	---
Loafercreek gravelly loam------	0-0.5	Slightly decomposed plant material	PT	---	0	0	0	0	0
	0.5-2	Gravelly loam	SM	A-5	0	0	75-100	70-95	60-90
	2-6	Gravelly loam	GC	A-6	0	0	60-100	55-95	40-90
	6-12	Loam	CL	A-6	0	0-10	65-95	60-90	50-85
	12-23	Gravelly loam	SC	A-6	0	0-10	65-95	60-90	50-85
	23-31	Gravelly silt loam	CL	A-6	0	0-15	60-95	55-90	40-85
	31-42	Weathered bedrock	---	---	0	0	0	---	---
	42	Bedrock	---	---	0	0	0	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
553:									
Dunstone gravelly loam---------	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	15-37	Weathered bedrock	---	---	0	0	---	---	---
	37	Bedrock	---	---	0	0	---	---	---
Loafercreek gravelly loam------	0-0.5	Slightly decomposed plant material	PT	---	0	0	0	0	0
	0.5-2	Gravelly loam	SM	A-5	0	0	75-100	70-95	60-90
	2-6	Gravelly loam	GC	A-6	0	0	60-100	55-95	40-90
	6-12	Loam	CL	A-6	0	0-10	65-95	60-90	50-85
	12-23	Gravelly loam	SC	A-6	0	0-10	65-95	60-90	50-85
	23-31	Gravelly silt loam	CL	A-6	0	0-15	60-95	55-90	40-85
	31-42	Weathered bedrock	---	---	0	0	0	---	---
	42	Bedrock			0	0	0	---	---
554:									
Dunstone gravelly loam---------	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	15-37	Weathered bedrock	---	---	0	0	---	---	---
	37	Bedrock	---	---	0	0	---	---	---
Loafercreek gravelly loam------	0-0.5	Slightly decomposed plant material	PT	---	0	0	0	0	0
	0.5-2	Gravelly loam	SM	A-5	0	0	75-100	70-95	60-90
	2-6	Gravelly loam	GC	A-6	0	0	60-100	55-95	40-90
	6-12	Loam	CL	A-6	0	0-10	65-95	60-90	50-85
	12-23	Gravelly loam	SC	A-6	0	0-10	65-95	60-90	50-85
	23-31	Gravelly silt loam	CL	A-6	0	0-15	60-95	55-90	40-85
	31-42	Weathered bedrock	---	---	0	0	0	---	---
	42	Bedrock	---	---	0	0	0	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
555:									
Dunstone gravelly loam---------	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	15-37	Weathered bedrock	---	---	0	0	---	---	---
	37	Bedrock	---	---	0	0	---	---	---
Loafercreek gravelly loam------	0-0.5	Slightly decomposed plant material	PT	---	0	0	0	0	0
	0.5-2	Gravelly loam	SM	A-5	0	0	75-100	70-95	60-90
	2-6	Gravelly loam	GC	A-6	0	0	60-100	55-95	40-90
	6-12	Loam	CL	A-6	0	0-10	65-95	60-90	50-85
	12-23	Gravelly loam	SC	A-6	0	0-10	65-95	60-90	50-85
	23-31	Gravelly silt loam	CL	A-6	0	0-15	60-95	55-90	40-85
	31-42	Weathered bedrock	---	---	0	0	0	---	---
	42	Bedrock	---	---	0	0	0	---	---
556:									
Mounthope loam-----------------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85
	52	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
556:									
Hartsmill gravelly loam--------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Gravelly loam	GC	A-4	0	0	60-90	55-85	40-80
	3-6	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	6-13	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	13-24	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	24-35	Very cobbly clay loam	CL	A-7-6	0	0-70	90-100	85-100	75-95
	35-62	Extremely cobbly clay loam	CH	A-7-6	0	0-70	90-100	85-100	75-95
	62	Bedrock	---	---	0	0	---	---	---
557:									
Mounthope loam-----------------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85
	52	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
557:									
Hartsmill gravelly loam--------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Gravelly loam	GC	A-4	0	0	60-90	55-85	40-80
	3-6	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	6-13	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	13-24	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	24-35	Very cobbly clay loam	CL	A-7-6	0	0-70	90-100	85-100	75-95
	35-62	Extremely cobbly clay loam	CH	A-7-6	0	0-70	90-100	85-100	75-95
	62	Bedrock	---	---	0	0	---	---	---
558:									
Hartsmill gravelly loam--------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Gravelly loam	GC	A-4	0	0	60-90	55-85	40-80
	3-6	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	6-13	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	13-24	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	24-35	Very cobbly clay loam	CL	A-7-6	0	0-70	90-100	85-100	75-95
	35-62	Extremely cobbly clay loam	CH	A-7-6	0	0-70	90-100	85-100	75-95
	62	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
558:									
Mounthope loam----------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85
	52	Bedrock	---	---	0	0	---	---	---
559:									
Hartsmill gravelly loam--------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Gravelly loam	GC	A-4	0	0	60-90	55-85	40-80
	3-6	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	6-13	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	13-24	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	24-35	Very cobbly clay loam	CL	A-7-6	0	0-70	90-100	85-100	75-95
	35-62	Extremely cobbly clay loam	CH	A-7-6	0	0-70	90-100	85-100	75-95
	62	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
559:									
Mounthope loam----------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85
	52	Bedrock	---	---	0	0	---	---	---
560:									
Hartsmill gravelly loam--------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Gravelly loam	GC	A-4	0	0	60-90	55-85	40-80
	3-6	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	6-13	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	13-24	Very gravelly loam	GC	A-2-6	0	0-25	40-90	35-85	30-80
	24-35	Very cobbly clay loam	CL	A-7-6	0	0-70	90-100	85-100	75-95
	35-62	Extremely cobbly clay loam	CH	A-7-6	0	0-70	90-100	85-100	75-95
	62	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
560:									
Mounthope loam----------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85
	52	Bedrock	---	---	0	0	---	---	---
561:									
Bigridge loam----------	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	51-62	Bedrock	---	---	0	0	---	---	---
Minniecreek loam----------	0-2	Loam	ML	A-6	0	0-10	60-95	55-90	40-85
	2-8	Loam	CL	A-6	0	0-10	50-100	45-100	40-95
	8-15	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	15-24	Silty clay loam	CL	A-7-6	0	0-10	60-100	55-100	50-95
	24-32	Silty clay loam	CL	A-7-6	0	0	75-100	70-100	65-95
	32-75	Weathered bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
562:									
Bigridge loam	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	51-62	Bedrock	---	---	0	0	---	---	---
Minniecreek loam	0-2	Loam	ML	A-6	0	0-10	60-95	55-90	40-85
	2-8	Loam	CL	A-6	0	0-10	50-100	45-100	40-95
	8-15	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	15-24	Silty clay loam	CL	A-7-6	0	0-10	60-100	55-100	50-95
	24-32	Silty clay loam	CL	A-7-6	0	0	75-100	70-100	65-95
	32-75	Weathered bedrock	---	---	0	0	---	---	---
563:									
Bigridge loam	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	51-62	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
563:									
Minniecreek loam	0-2	Loam	ML	A-6	0	0-10	60-95	55-90	40-85
	2-8	Loam	CL	A-6	0	0-10	50-100	45-100	40-95
	8-15	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	15-24	Silty clay loam	CL	A-7-6	0	0-10	60-100	55-100	50-95
	24-32	Silty clay loam	CL	A-7-6	0	0	75-100	70-100	65-95
	32-75	Weathered bedrock	---	---	0	0	---	---	---
564:									
Bigridge loam	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	51-62	Bedrock	---	---	0	0	---	---	---
Minniecreek loam	0-2	Loam	ML	A-6	0	0-10	60-95	55-90	40-85
	2-8	Loam	CL	A-6	0	0-10	50-100	45-100	40-95
	8-15	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	15-24	Silty clay loam	CL	A-7-6	0	0-10	60-100	55-100	50-95
	24-32	Silty clay loam	CL	A-7-6	0	0	75-100	70-100	65-95
	32-75	Weathered bedrock	---	---	0	0	---	---	---
565:									
Dunstone loam, dry	0-2	Loam	ML	A-4	0	0-10	60-100	55-100	40-95
	2-7	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	7-10	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	10-16	Loam	CL	A-6	0	0-10	45-100	40-100	35-95
	16	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
565:									
Argonaut taxadjunct loam-------	0-2	Loam	ML	A-6	0	0	90-95	85-90	70-85
	2-8	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85
	8-14	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95
	14-20	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95
	20-26	Clay	CH	A-7-6	0	0	90-95	85-90	75-85
	26-30	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85
	30	Bedrock	---	---	0	0	---	---	---
Sunnyslope loam----------	0-2	Loam	ML	A-6	0	0	90-100	85-100	70-95
	2-6	Gravelly loam	CL	A-6	0	0	55-80	50-75	40-70
	6-10	Very cobbly loam	GC	A-2-6	0	0-40	25-55	20-50	15-50
	10-14	Extremely gravelly clay loam	GC	A-2-6	0	0-50	25-55	20-50	15-45
	14	Bedrock	---	---	0	0	---	---	---
566:									
Dunstone loam, dry----------	0-2	Loam	ML	A-4	0	0-10	60-100	55-100	40-95
	2-7	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	7-10	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	10-16	Loam	CL	A-6	0	0-10	45-100	40-100	35-95
	16	Bedrock	---	---	0	0	---	---	---
Loafercreek silt loam, dry-----	0-2	Silt loam	ML	A-7-5	0	0	75-100	70-100	60-95
	2-4	Silt loam	CL	A-4	0	0	75-100	70-100	60-95
	4-11	Loam	CL	A-4	0	0-10	90-100	85-100	70-95
	11-20	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	20-29	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	29	Bedrock	---	---	0	0	---	---	---
Katskillhill loam----------	0-2	Loam	ML	A-4	0	0	95-100	90-100	75-95
	2-8	Loam	CL	A-4	0	0	90-95	85-90	70-85
	8-12	Very gravelly loam	GC	A-2-6	0	0	30-95	25-90	20-85
	12-19	Clay	CH	A-7-6	0	0	75-100	70-100	65-95
	19-29	Clay	CH	A-7-6	0	0	90-100	85-100	75-95
	29-42	Clay	CH	A-7-6	0	0	90-100	85-100	75-95
	42	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
567:									
Dunstone loam, dry----------	0-2	Loam	ML	A-4	0	0-10	60-100	55-100	40-95
	2-7	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	7-10	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	10-16	Loam	CL	A-6	0	0-10	45-100	40-100	35-95
	16	Bedrock	---	---	0	0	---	---	---
Loafercreek silt loam, dry-----	0-2	Silt loam	ML	A-7-5	0	0	75-100	70-100	60-95
	2-4	Silt loam	CL	A-4	0	0	75-100	70-100	60-95
	4-11	Loam	CL	A-4	0	0-10	90-100	85-100	70-95
	11-20	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	20-29	Loam	CL	A-6	0	0-10	60-100	55-100	40-95
	29	Bedrock	---	---	0	0	---	---	---
Argonaut taxadjunct loam-------	0-2	Loam	ML	A-6	0	0	90-95	85-90	70-85
	2-8	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85
	8-14	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95
	14-20	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95
	20-26	Clay	CH	A-7-6	0	0	90-95	85-90	75-85
	26-30	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85
	30	Bedrock	---	---	0	0	---	---	---
577:									
Parkshill coarse sandy loam----	0-2	Coarse sandy loam	SM	A-2-5	0	0	95-100	90-100	55-95
	2-8	Coarse sandy loam	SC	A-2-4	0	0	95-100	90-100	55-70
	8-18	Coarse sandy loam	SC	A-2-6	0	0	95-100	90-100	55-70
	18-26	Coarse sandy loam	SC	A-2-6	0	0	95-100	90-100	55-70
	26-35	Sandy clay loam	SC	A-6	0	0	80-100	75-100	40-90
	35-53	Sandy clay loam	SC	A-6	0	0	65-100	60-100	35-90
	53-61	Sandy clay loam	SC	A-6	0	0	65-100	60-100	35-90
Flanly loam----------	0-2	Loam	ML	A-4	0	0	80-100	75-100	40-95
	2-5	Sandy loam	SC	A-2-4	0	0	80-100	75-100	40-95
	5-10	Sandy loam	SC	A-2-6	0	0	80-100	75-100	40-10
	10-23	Sandy clay loam	SC	A-6	0	0	75-100	70-100	60-10
	23-26	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
577:									
Hurleton gravelly sandy loam---	0-3	Gravelly sandy loam	SM	A-1-b	0	0	45-90	40-85	25-60
	3-7	Gravelly sandy loam	SM	A-2-4	0	0	45-90	40-85	25-60
	7-12	Gravelly sandy loam	SC	A-2-4	0	0-60	45-65	40-60	25-40
	12-16	Very gravelly sandy loam	GC	A-2-4	0	0-75	30-55	25-50	20-50
	16-19	Very gravelly sandy loam	GC	A-2-6	0	15-75	45-75	40-70	25-65
	19-25	Extremely gravelly sandy clay loam	GP-GC	A-2-6	0	0-75	25-55	20-50	15-45
	25	Bedrock	---	---	0	0	---	---	---
578:									
Flanly loam----------	0-2	Loam	ML	A-4	0	0	80-100	75-100	40-95
	2-5	Sandy loam	SC	A-2-4	0	0	80-100	75-100	40-95
	5-10	Sandy loam	SC	A-2-6	0	0	80-100	75-100	40-10
	10-23	Sandy clay loam	SC	A-6	0	0	75-100	70-100	60-10
	23-26	Bedrock	---	---	0	0	---	---	---
Swedesflat cobbly fine sandy loam----------	0-2	Cobbly fine sandy loam	SM	A-4	0	0-25	60-100	55-100	35-95
	2-8	Cobbly sandy loam	SC	A-2-4	0	0-25	45-95	40-90	25-80
	8-12	Sandy loam	SC	A-2-6	0	0	60-100	55-100	35-95
	12-18	Weathered bedrock	---	---	0	0	---	---	---
580:									
Surnuf taxadjunct loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-5	Loam	MH	A-7-5	0-45	0-15	90-95	85-90	75-85
	5-11	Clay loam	MH	A-7-5	0-45	0-15	50-100	45-100	40-95
	11-18	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95
	18-31	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95
	31-43	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95
	43-54	Very stony silty clay loam	CH	A-7-6	0-65	0-75	65-100	60-100	55-95
	54-67	Silty clay loam	CL	A-7-6	0	0-10	50-100	45-100	40-95

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passi sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
580:									
Griffgulch very gravelly silt loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	58	Bedrock	---	---	---	---	---	---	---
Rock outcrop, metavolcanic.									
581:									
Surnuf taxadjunct loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-5	Loam	MH	A-7-5	0-45	0-15	90-95	85-90	75-85
	5-11	Clay loam	MH	A-7-5	0-45	0-15	50-100	45-100	40-95
	11-18	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95
	18-31	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95
	31-43	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95
	43-54	Very stony silty clay loam	CH	A-7-6	0-65	0-75	65-100	60-100	55-95
	54-67	Silty clay loam	CL	A-7-6	0	0-10	50-100	45-100	40-95

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
581:									
Griffgulch very gravelly silt loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	58	Bedrock	---	---	---	---	---	---	---
582:									
Surnuf taxadjunct loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-5	Loam	MH	A-7-5	0-45	0-15	90-95	85-90	75-85
	5-11	Clay loam	MH	A-7-5	0-45	0-15	50-100	45-100	40-95
	11-18	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95
	18-31	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95
	31-43	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95
	43-54	Very stony silty clay loam	CH	A-7-6	0-65	0-75	65-100	60-100	55-95
	54-67	Silty clay loam	CL	A-7-6	0	0-10	50-100	45-100	40-95

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
582:									
Griffgulch very gravelly silt loam	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	58	Bedrock	---	---	---	---	---	---	---
583:									
Surnuf taxadjunct loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-5	Loam	MH	A-7-5	0-45	0-15	90-95	85-90	75-85
	5-11	Clay loam	MH	A-7-5	0-45	0-15	50-100	45-100	40-95
	11-18	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95
	18-31	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95
	31-43	Silty clay	CH	A-7-6	0-45	0-45	65-100	60-100	55-95
	43-54	Very stony silty clay loam	CH	A-7-6	0-65	0-75	65-100	60-100	55-95
	54-67	Silty clay loam	CL	A-7-6	0	0-10	50-100	45-100	40-95

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
583:									
Griffgulch very gravelly silt loam	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	58	Bedrock	---	---	---	---	---	---	---
584:									
Flanly loam	0-2	Loam	ML	A-4	0	0	80-100	75-100	40-95
	2-5	Sandy loam	SC	A-2-4	0	0	80-100	75-100	40-95
	5-10	Sandy loam	SC	A-2-6	0	0	80-100	75-100	40-10
	10-23	Sandy clay loam	SC	A-6	0	0	75-100	70-100	60-10
	23-26	Bedrock	---	---	0	0	---	---	---
Swedesflat cobbly fine sandy loam	0-2	Cobbly fine sandy loam	SM	A-4	0	0-25	60-100	55-100	35-95
	2-8	Cobbly sandy loam	SC	A-2-4	0	0-25	45-95	40-90	25-80
	8-12	Sandy loam	SC	A-2-6	0	0	60-100	55-100	35-95
	12-18	Weathered bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
584:									
Rackerby very gravelly sandy loam	0-2	Very gravelly sandy loam	GM	A-2-4	0-10	0	50-80	45-75	25-70
	2-5	Gravelly sandy loam	SC	A-2-6	0-10	0	45-65	40-60	25-55
	5-13	Very gravelly sandy loam	GC	A-2-6	0	10-80	45-90	40-85	25-80
	13	Bedrock	---	---	---	---	---	---	---
585:									
Flanly loam	0-2	Loam	ML	A-4	0	0	80-100	75-100	40-95
	2-5	Sandy loam	SC	A-2-4	0	0	80-100	75-100	40-95
	5-10	Sandy loam	SC	A-2-6	0	0	80-100	75-100	40-10
	10-23	Sandy clay loam	SC	A-6	0	0	75-100	70-100	60-10
	23-26	Bedrock	---	---	0	0	---	---	---
Sommeyflat loam	0-2	Loam	ML	A-6	0	0	75-100	70-100	60-95
	2-9	Loam	CL	A-6	0	0	75-100	70-100	60-95
	9-14	Loam	CL	A-6	0	0	90-100	85-100	70-10
	14-24	Loam	CL	A-6	0	0	80-100	75-100	60-10
	24-31	Loam	CL	A-6	0	0	90-100	85-100	85-10
	31-62	Loam	CL	A-6	0	0	65-100	60-100	40-95
	62-70	Loam	CL	A-4	0	0	65-100	60-100	40-95
586:									
Sommeyflat loam	0-2	Loam	ML	A-6	0	0	75-100	70-100	60-95
	2-9	Loam	CL	A-6	0	0	75-100	70-100	60-95
	9-14	Loam	CL	A-6	0	0	90-100	85-100	70-10
	14-24	Loam	CL	A-6	0	0	80-100	75-100	60-10
	24-31	Loam	CL	A-6	0	0	90-100	85-100	85-10
	31-62	Loam	CL	A-6	0	0	65-100	60-100	40-95
	62-70	Loam	CL	A-4	0	0	65-100	60-100	40-95

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
586:									
Mounthope loam----------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85
	52	Bedrock	---	---	0	0	---	---	---
587:									
Sommeyflat loam----------	0-2	Loam	ML	A-6	0	0	75-100	70-100	60-95
	2-9	Loam	CL	A-6	0	0	75-100	70-100	60-95
	9-14	Loam	CL	A-6	0	0	90-100	85-100	70-10
	14-24	Loam	CL	A-6	0	0	80-100	75-100	60-10
	24-31	Loam	CL	A-6	0	0	90-100	85-100	85-10
	31-62	Loam	CL	A-6	0	0	65-100	60-100	40-95
	62-70	Loam	CL	A-4	0	0	65-100	60-100	40-95
Mounthope loam----------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85
	52	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
587:									
Hurleton gravelly sandy loam---	0-3	Gravelly sandy loam	SM	A-1-b	0	0	45-90	40-85	25-60
	3-7	Gravelly sandy loam	SM	A-2-4	0	0	45-90	40-85	25-60
	7-12	Gravelly sandy loam	SC	A-2-4	0	0-60	45-65	40-60	25-40
	12-16	Very gravelly sandy loam	GC	A-2-4	0	0-75	30-55	25-50	20-50
	16-19	Very gravelly sandy loam	GC	A-2-6	0	15-75	45-75	40-70	25-65
	19-25	Extremely gravelly sandy clay loam	GP-GC	A-2-6	0	0-75	25-55	20-50	15-45
	25	Bedrock	---	---	0	0	---	---	---
588:									
Ultic Haploxeralfs, thermic, high terrace------------------	0-2	Loam	CL	A-6	0	0	60-90	55-85	35-80
	2-6	Gravelly loam	GC	A-6	0	0-25	45-80	40-75	25-70
	6-12	Very gravelly loam	GC	A-2-6	0	0-25	40-80	35-75	20-75
	12-20	Very gravelly loam	GC	A-6	0	0-25	40-80	35-75	20-75
	20-32	Extremely gravelly clay loam	GC	A-2-6	0	0-15	30-80	25-75	20-75
	32-39	Extremely gravelly loam	GC	A-2-6	0	0-25	10-40	5-35	0-35
	39-50	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-25	10-40	5-35	0-25

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
589:									
Ultic Haploxeralfs, thermic, high terrace	0-2	Loam	CL	A-6	0	0	60-90	55-85	35-80
	2-6	Gravelly loam	GC	A-6	0	0-25	45-80	40-75	25-70
	6-12	Very gravelly loam	GC	A-2-6	0	0-25	40-80	35-75	20-75
	12-20	Very gravelly loam	GC	A-6	0	0-25	40-80	35-75	20-75
	20-32	Extremely gravelly clay loam	GC	A-2-6	0	0-15	30-80	25-75	20-75
	32-39	Extremely gravelly loam	GC	A-2-6	0	0-25	10-40	5-35	0-35
	39-50	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-25	10-40	5-35	0-25
590:									
Vistarobles sandy loam	0-5	Sandy loam	SC	A-2-6	0	0-15	75-95	70-90	40-85
	5-10	Sandy clay loam	SC	A-6	0	0-15	75-95	70-90	40-85
	10-14	Gravelly clay	CL	A-7-6	0	0	65-100	60-100	55-10
	14-34	Cemented gravelly material	SM	A-1-b	0	10-75	30-75	25-70	15-50
	34-40	Very cobbly sandy loam	SC	A-2-4	0	0-40	30-80	25-75	15-50
Redding loam	0-4	Loam	CL	A-6	0	0	75-95	70-90	40-85
	4-11	Loam	CL	A-6	0	0	75-95	70-90	40-85
	11-24	Loam	CL	A-6	0	0-10	60-100	55-100	35-95
	24-35	Clay	CH	A-7-6	0	0-30	55-100	50-100	45-10
	35-40	Cemented very gravelly material	---	---	0	---	---	---	---
Argonaut taxadjunct loam	0-2	Loam	ML	A-6	0	0	90-95	85-90	70-85
	2-8	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85
	8-14	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95
	14-20	Clay	CH	A-7-6	0-15	0-15	75-100	70-100	65-95
	20-26	Clay	CH	A-7-6	0	0	90-95	85-90	75-85
	26-30	Clay loam	CL	A-7-6	0	0	90-95	85-90	75-85
	30	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
590:									
Haploxererts gravelly silty clay----------	0-2	Gravelly silty clay	CH	A-7-6	0	0-10	80-100	75-100	70-10
	2-10	Gravelly clay	CH	A-7-6	0	0	80-95	75-90	65-90
	10-30	Gravelly clay	CH	A-7-6	0	0	75-95	70-90	65-90
	30-33	Silty clay	CH	A-7-6	0	0	90-100	85-100	75-10
	33-41	Silty clay	CH	A-7-6	0	0	90-100	85-100	75-10
	41-44	Bedrock	---	---	0	0	---	---	---
603:									
Oroville gravelly fine sandy loam----------	0-2	Gravelly fine sandy loam	SC	A-2-6	0	0	75-95	70-90	40-85
	2-6	Gravelly sandy loam	SC	A-2-6	0	0	75-100	70-100	40-85
	6-13	Gravelly clay loam	CL	A-6	0	0	50-95	45-90	35-90
	13-17	Gravelly clay	CH	A-7-6	0	0	45-95	40-90	35-90
	17-23	Gravelly sandy clay	GC	A-2-7	0	0	45-95	40-90	35-90
	23-60	Cemented extremely gravelly material	---	---	0	0-10	---	---	---
Thermalito sandy loam----------	0-2	Sandy loam	SC	A-2-4	0	0	65-100	60-100	35-95
	2-6	Gravelly sandy loam	SC	A-2-6	0	0	60-95	55-90	35-85
	6-12	Sandy clay loam	SC	A-6	0	0	60-95	55-90	35-85
	12-18	Gravelly sandy clay loam	SC	A-2-6	0	0	60-95	55-90	35-85
	18-23	Gravelly sandy clay loam	SC	A-2-6	0	0	60-95	55-90	35-85
	23-25	Gravelly sandy clay loam	SC	A-2-7	0	0	60-95	55-90	35-85
	25-29	Gravelly clay	CH	A-7-6	0	0	60-100	55-100	50-10
	29-32	Gravelly clay	CH	A-7-6	0	0	60-100	55-100	50-10
	32-60	Cemented gravelly material	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
603:									
Fernandez sandy loam----------	0-2	Sandy loam	SC	A-2-6	0	0	75-95	70-90	40-85
	2-6	Sandy clay loam	SC	A-2-6	0	0	55-95	50-90	30-90
	6-18	Sandy clay loam	SC	A-2-6	0	0	55-95	50-90	30-90
	18-28	Clay loam	CL	A-7-6	0	0	45-100	40-100	85-10
	28-44	Clay loam	CL	A-7-6	0	0	45-100	40-100	85-10
	44-57	Clay	CH	A-7-6	0	0	45-100	40-100	80-10
	57-65	Gravelly clay	CH	A-7-6	0	0	45-100	40-100	65-10
	65-73	Gravelly clay loam	GC	A-2-7	0	0	45-100	40-100	35-10
	73-85	Cemented gravelly material	---	---	0	0	---	---	---
Thompsonflat fine sandy loam---	0-3	Fine sandy loam	SC	A-4	0	0	65-100	60-100	35-95
	3-7	Fine sandy loam	SC	A-6	0-10	0-25	75-100	70-100	50-95
	7-11	Sandy clay loam	SC	A-6	0-10	0-25	75-100	70-100	50-95
	11-15	Sandy clay	SC	A-7-6	0-10	0-15	75-100	70-100	50-95
	15-22	Gravelly sandy clay	SC	A-2-7	0	0-15	25-100	20-100	10-10
	22-35	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-40	25-85	20-85	10-80
	35-45	Extremely gravelly coarse sandy loam	GC-GM	A-2-4	0	0-40	25-85	20-85	10-80
	45-53	Extremely gravelly coarse sandy loam	GM	A-1-a	0	0-40	25-85	20-85	10-80
	53-66	Extremely gravelly coarse sandy loam	GP-GM	A-1-a	0	0-40	25-85	20-85	10-80
	66-80	Extremely gravelly coarse sandy loam	GP-GM	A-1-a	0	0-40	25-85	20-85	10-80

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
605:									
Duric Xerarents fine sandy loam, leveled	0-5	Fine sandy loam	SC	A-6	0	0	55-100	50-100	30-95
	5-12	Very gravelly sandy loam, clay	SC-SM	A-2-4	0	0	40-90	35-85	20-85
	12-18	Cemented extremely gravelly material	---	---	---	---	---	---	---
Oroville gravelly fine sandy loam	0-2	Gravelly fine sandy loam	SC	A-2-6	0	0	75-95	70-90	40-85
	2-6	Gravelly sandy loam	SC	A-2-6	0	0	75-100	70-100	40-85
	6-13	Gravelly clay loam	CL	A-6	0	0	50-95	45-90	35-90
	13-17	Gravelly clay	CH	A-7-6	0	0	45-95	40-90	35-90
	17-23	Gravelly sandy clay	GC	A-2-7	0	0	45-95	40-90	35-90
	23-60	Cemented extremely gravelly material	---	---	0	0-10	---	---	---
606:									
Redtough loam	0-1	Loam	ML	A-7-5	0	0-10	55-100	50-100	40-95
	1-7	Gravelly loam	CL	A-6	0	0-55	50-100	45-90	40-85
	7-13	Very cobbly loam	CL	A-6	0	0-55	50-100	45-90	40-85
	13	Cemented very gravelly material	---	---	---	---	---	---	---
Fallager loam	0-1	Loam	ML	A-7-6	0	0-15	80-95	75-90	60-90
	1-3	Gravelly clay loam	CL	A-7-6	0	0-15	80-95	75-90	65-90
	3-7	Gravelly clay	CH	A-7-6	0	0-15	60-90	55-85	50-85
	7	Cemented gravelly material	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
606:									
Anita, gravelly duripan--------	0-3	Gravelly clay	CH	A-7-5	0	0-30	80-95	75-90	65-90
	3-8	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85
	8-15	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85
	15	Cemented gravelly material	---	---	0	0-65	---	---	---
609:									
Anita, gravelly duripan--------	0-3	Gravelly clay	CH	A-7-5	0	0-30	80-95	75-90	65-90
	3-8	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85
	8-15	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85
	15	Cemented gravelly material	---	---	0	0-65	---	---	---
Tuscan taxadjunct gravelly clay loam---------------------------	0-2	Gravelly clay loam	CL	A-7-6	0	0-10	75-90	70-85	60-80
	2-5	Gravelly clay	CH	A-7-6	0	0-30	55-90	50-85	40-85
	5-13	Gravelly clay	CH	A-7-6	0	0-30	55-90	50-85	45-85
	13-23	Gravelly clay loam	CH	A-7-6	0	0-30	55-90	50-85	45-85
	23-29	Very gravelly clay loam	GC	A-7-6	0	0-55	40-80	35-75	30-70
	29	Cemented extremely cobbly material	---	---	0	---	---	---	---
614:									
Doemill gravelly loam----------	0-1	Gravelly loam	ML	A-4	0-15	0-15	80-100	75-98	60-93
	1-5	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	5-9	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	9-14	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	14	Bedrock	---	---	---	---	---	---	---
Jokerst very cobbly loam-------	0-1	Very cobbly loam	ML	A-4	0-45	15-55	65-90	60-85	50-80
	1-4	Gravelly loam	CL	A-6	0-15	0-30	65-90	60-85	50-80
	4	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
615:									
Doemill gravelly loam----------	0-1	Gravelly loam	ML	A-4	0-15	0-15	80-100	75-98	60-93
	1-5	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	5-9	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	9-14	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	14	Bedrock	---	---	---	---	---	---	---
Jokerst very cobbly loam-------	0-1	Very cobbly loam	ML	A-4	0-45	15-55	65-90	60-85	50-80
	1-4	Gravelly loam	CL	A-6	0-15	0-30	65-90	60-85	50-80
	4	Bedrock	---	---	---	---	---	---	---
616:									
Jokerst very cobbly loam-------	0-1	Very cobbly loam	ML	A-4	0-45	15-55	65-90	60-85	50-80
	1-4	Gravelly loam	CL	A-6	0-15	0-30	65-90	60-85	50-80
	4	Bedrock	---	---	---	---	---	---	---
Doemill gravelly loam----------	0-1	Gravelly loam	ML	A-4	0-15	0-15	80-100	75-98	60-93
	1-5	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	5-9	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	9-14	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	14	Bedrock	---	---	---	---	---	---	---
Typic Haploxeralfs gravelly loam---------------------------	0-2	Gravelly loam	GC	A-6	0	0-25	65-95	60-90	50-90
	2-8	Gravelly clay loam	CL	A-6	0-40	0-45	45-95	40-90	30-90
	8-16	Very gravelly clay loam	CL	A-7-6	0-40	0-45	45-95	40-90	30-90
	16-27	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90
	27-40	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90
	40	Bedrock	---	---	---	---	---	---	---
617:									
Doemill gravelly loam----------	0-1	Gravelly loam	ML	A-4	0-15	0-15	80-100	75-98	60-93
	1-5	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	5-9	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	9-14	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	14	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passi sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
617:									
Jokerst very cobbly loam-------	0-1	Very cobbly loam	ML	A-4	0-45	15-55	65-90	60-85	50-80
	1-4	Gravelly loam	CL	A-6	0-15	0-30	65-90	60-85	50-80
	4	Bedrock	---	---	---	---	---	---	---
Typic Haploxeralfs gravelly loam---------------------------	0-2	Gravelly loam	GC	A-6	0	0-25	65-95	60-90	50-90
	2-8	Gravelly clay loam	CL	A-6	0-40	0-45	45-95	40-90	30-90
	8-16	Very gravelly clay loam	CL	A-7-6	0-40	0-45	45-95	40-90	30-90
	16-27	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90
	27-40	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90
	40	Bedrock	---	---	---	---	---	---	---
619:									
Carhart taxadjunct clay--------	0-4	Clay	CH	A-7-5	0-10	10-50	90-100	85-100	75-100
	4-11	Gravelly clay	CH	A-7-6	0-15	10-75	80-100	75-96	65-96
	11-17	Clay	CH	A-7-6	0-15	10-75	80-100	75-96	65-96
	17	Bedrock	---	---	---	---	---	---	---
620:									
Doemill gravelly loam----------	0-1	Gravelly loam	ML	A-4	0-15	0-15	80-100	75-98	60-93
	1-5	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	5-9	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	9-14	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	14	Bedrock	---	---	---	---	---	---	---
Jokerst very cobbly loam-------	0-1	Very cobbly loam	ML	A-4	0-45	15-55	65-90	60-85	50-80
	1-4	Gravelly loam	CL	A-6	0-15	0-30	65-90	60-85	50-80
	4	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
620:									
Ultic Haploxeralfs, thermic, gravelly loam	0-2	Gravelly loam	MH	A-7-5	0-10	0-25	65-90	60-85	50-80
	2-6	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80
	6-13	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80
	13-21	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80
	21-31	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80
	31	Bedrock	---	---	---	---	---	---	---
621:									
Doemill gravelly loam	0-1	Gravelly loam	ML	A-4	0-15	0-15	80-100	75-98	60-93
	1-5	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	5-9	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	9-14	Gravelly loam	CL	A-6	0-15	0-30	75-100	70-96	60-96
	14	Bedrock	---	---	---	---	---	---	---
Jokerst very cobbly loam	0-1	Very cobbly loam	ML	A-4	0-45	15-55	65-90	60-85	50-80
	1-4	Gravelly loam	CL	A-6	0-15	0-30	65-90	60-85	50-80
	4	Bedrock	---	---	---	---	---	---	---
Ultic Haploxeralfs, thermic, gravelly loam	0-2	Gravelly loam	MH	A-7-5	0-10	0-25	65-90	60-85	50-80
	2-6	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80
	6-13	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80
	13-21	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80
	21-31	Very cobbly clay loam	CL	A-7-6	0-25	0-55	50-90	45-85	40-80
	31	Bedrock	---	---	---	---	---	---	---
622:									
Xerorthents, shallow	0-2	Gravelly clay loam	CL	A-6	0-30	0-15	65-100	60-97	35-97
	2-5	Gravelly clay loam	CL	A-7-6	0-15	0-40	50-100	45-99	35-99
	5-8	Very cobbly clay loam	CL	A-7-6	0-15	0-40	50-100	45-99	35-99
	8	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
622:									
Typic Haploxeralfs gravelly loam----------	0-2	Gravelly loam	GC	A-6	0	0-25	65-95	60-90	50-90
	2-8	Gravelly clay loam	CL	A-6	0-40	0-45	45-95	40-90	30-90
	8-16	Very gravelly clay loam	CL	A-7-6	0-40	0-45	45-95	40-90	30-90
	16-27	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90
	27-40	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90
	40	Bedrock	---	---	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.									
623:									
Xerorthents, shallow----------	0-2	Gravelly clay loam	CL	A-6	0-30	0-15	65-100	60-97	35-97
	2-5	Gravelly clay loam	CL	A-7-6	0-15	0-40	50-100	45-99	35-99
	5-8	Very cobbly clay loam	CL	A-7-6	0-15	0-40	50-100	45-99	35-99
	8	Bedrock	---	---	---	---	---	---	---
Typic Haploxeralfs gravelly loam----------	0-2	Gravelly loam	GC	A-6	0	0-25	65-95	60-90	50-90
	2-8	Gravelly clay loam	CL	A-6	0-40	0-45	45-95	40-90	30-90
	8-16	Very gravelly clay loam	CL	A-7-6	0-40	0-45	45-95	40-90	30-90
	16-27	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90
	27-40	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90
	40	Bedrock	---	---	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
624:									
Ultic Haploxeralfs, mesic, gravelly loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	GC	A-4	0-10	0-15	55-100	50-98	40-93
	4-9	Cobbly loam	CL	A-6	0-30	0-30	65-100	60-98	50-98
	9-23	Very stony clay loam	CL	A-6	0-30	0-30	65-100	60-98	50-98
	23-32	Very cobbly clay loam	CL	A-6	0-30	0-30	65-100	60-98	50-98
	32-42	Extremely stony clay loam	CL	A-6	0-75	0-45	65-95	60-90	55-90
	42	Bedrock	---	---	---	---	---	---	---
Rockstripe very gravelly loam	0-2	Very gravelly loam	GM	A-7-5	0-30	0-15	45-65	40-60	25-55
	2-6	Very cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70
	6-9	Cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70
	9	Bedrock	---	---	---	---	---	---	---
625:									
Ultic Haploxeralfs, mesic, gravelly loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	GC	A-4	0-10	0-15	55-100	50-98	40-93
	4-9	Cobbly loam	CL	A-6	0-30	0-30	65-100	60-98	50-98
	9-23	Very stony clay loam	CL	A-6	0-30	0-30	65-100	60-98	50-98
	23-32	Very cobbly clay loam	CL	A-6	0-30	0-30	65-100	60-98	50-98
	32-42	Extremely stony clay loam	CL	A-6	0-75	0-45	65-95	60-90	55-90
	42	Bedrock	---	---	---	---	---	---	---
Rockstripe very gravelly loam	0-2	Very gravelly loam	GM	A-7-5	0-30	0-15	45-65	40-60	25-55
	2-6	Very cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70
	6-9	Cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70
	9	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
626:									
Ultic Haploxeralfs gravelly loam----------	0-4	Gravelly loam	CL	A-6	0	0	50-80	45-75	40-70
	4-10	Gravelly loam	CL	A-6	0-30	0-30	40-95	35-90	30-90
	10-18	Gravelly clay loam	CL	A-6	0-30	0-30	40-95	35-90	30-90
	18-35	Gravelly clay loam	CL	A-7-6	0-30	0-30	40-80	35-75	30-75
	35-48	Gravelly clay	CH	A-7-6	0-30	0-30	40-80	35-75	30-75
	48	Bedrock	---	---	---	---	---	---	---
Rockstripe very gravelly loam--	0-2	Very gravelly loam	GM	A-7-5	0-30	0-15	45-65	40-60	25-55
	2-6	Very cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70
	6-9	Cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70
	9	Bedrock	---	---	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.									
627:									
Ultic Haploxeralfs gravelly loam----------	0-4	Gravelly loam	CL	A-6	0	0	50-80	45-75	40-70
	4-10	Gravelly loam	CL	A-6	0-30	0-30	40-95	35-90	30-90
	10-18	Gravelly clay loam	CL	A-6	0-30	0-30	40-95	35-90	30-90
	18-35	Gravelly clay loam	CL	A-7-6	0-30	0-30	40-80	35-75	30-75
	35-48	Gravelly clay	CH	A-7-6	0-30	0-30	40-80	35-75	30-75
	48	Bedrock	---	---	---	---	---	---	---
Rockstripe very gravelly loam--	0-2	Very gravelly loam	GM	A-7-5	0-30	0-15	45-65	40-60	25-55
	2-6	Very cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70
	6-9	Cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70
	9	Bedrock	---	---	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
628:									
Rockstripe very gravelly loam--	0-2	Very gravelly loam	GM	A-7-5	0-30	0-15	45-65	40-60	25-55
	2-6	Very cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70
	6-9	Cobbly loam	CL	A-6	0-60	0-45	55-80	50-75	30-70
	9	Bedrock	---	---	---	---	---	---	---
Ultic Haploxeralfs gravelly loam----------	0-4	Gravelly loam	CL	A-6	0	0	50-80	45-75	40-70
	4-10	Gravelly loam	CL	A-6	0-30	0-30	40-95	35-90	30-90
	10-18	Gravelly clay loam	CL	A-6	0-30	0-30	40-95	35-90	30-90
	18-35	Gravelly clay loam	CL	A-7-6	0-30	0-30	40-80	35-75	30-75
	35-48	Gravelly clay	CH	A-7-6	0-30	0-30	40-80	35-75	30-75
	48	Bedrock	---	---	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.									
629:									
Slideland gravelly loam--------	0-2	Gravelly loam	ML	A-7-6	0	0	60-100	55-98	40-93
	2-9	Gravelly loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90
	9-14	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90
	14-21	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90
	21-28	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90
	28-38	Gravelly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90
	38-51	Gravelly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90
	51-69	Very cobbly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90
	69-80	Very cobbly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
630:									
Slideland gravelly loam--------	0-2	Gravelly loam	ML	A-7-6	0	0	60-100	55-98	40-93
	2-9	Gravelly loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90
	9-14	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90
	14-21	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90
	21-28	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90
	28-38	Gravelly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90
	38-51	Gravelly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90
	51-69	Very cobbly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90
	69-80	Very cobbly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90
631:									
Slideland gravelly loam--------	0-2	Gravelly loam	ML	A-7-6	0	0	60-100	55-98	40-93
	2-9	Gravelly loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90
	9-14	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90
	14-21	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90
	21-28	Gravelly clay loam	CL	A-7-6	0-10	0-15	60-95	55-90	40-90
	28-38	Gravelly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90
	38-51	Gravelly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90
	51-69	Very cobbly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90
	69-80	Very cobbly clay loam	CL	A-7-6	0-10	0-40	60-95	55-90	50-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
632:									
Ultic Haploxeralfs, conglomerate, very deep-------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-6	Gravelly clay loam	CL	A-6	0-6	0-15	45-80	40-75	30-75
	6-10	Gravelly clay loam	CL	A-6	0-10	0-45	45-90	40-85	30-80
	10-17	Clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	17-28	Cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	28-40	Very cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	40-50	Very gravelly clay	CL	A-7-6	0-10	15-60	45-90	40-85	30-85
	50-71	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85
	71-84	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-5	Very gravelly loam	GC	A-2-6	0	10-25	40-55	35-50	30-50
	5-10	Very gravelly clay loam	GC	A-6	0	10-50	40-80	35-75	30-75
	10-25	Extremely gravelly sandy clay loam	GC	A-2-6	0	10-50	40-80	35-75	30-75
	25	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
633:									
Ultic Haploxeralfs, conglomerate, very deep-------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-6	Gravelly clay loam	CL	A-6	0-6	0-15	45-80	40-75	30-75
	6-10	Gravelly clay loam	CL	A-6	0-10	0-45	45-90	40-85	30-80
	10-17	Clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	17-28	Cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	28-40	Very cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	40-50	Very gravelly clay	CL	A-7-6	0-10	15-60	45-90	40-85	30-85
	50-71	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85
	71-84	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-5	Very gravelly loam	GC	A-2-6	0	10-25	40-55	35-50	30-50
	5-10	Very gravelly clay loam	GC	A-6	0	10-50	40-80	35-75	30-75
	10-25	Extremely gravelly sandy clay loam	GC	A-2-6	0	10-50	40-80	35-75	30-75
	25	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
634:									
Ultic Haploxeralfs, conglomerate, very deep-------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-6	Gravelly clay loam	CL	A-6	0-6	0-15	45-80	40-75	30-75
	6-10	Gravelly clay loam	CL	A-6	0-10	0-45	45-90	40-85	30-80
	10-17	Clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	17-28	Cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	28-40	Very cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	40-50	Very gravelly clay	CL	A-7-6	0-10	15-60	45-90	40-85	30-85
	50-71	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85
	71-84	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-5	Very gravelly loam	GC	A-2-6	0	10-25	40-55	35-50	30-50
	5-10	Very gravelly clay loam	GC	A-6	0	10-50	40-80	35-75	30-75
	10-25	Extremely gravelly sandy clay loam	GC	A-2-6	0	10-50	40-80	35-75	30-75
	25	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
635:									
Ultic Haploxeralfs, conglomerate, very deep-------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-6	Gravelly clay loam	CL	A-6	0-6	0-15	45-80	40-75	30-75
	6-10	Gravelly clay loam	CL	A-6	0-10	0-45	45-90	40-85	30-80
	10-17	Clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	17-28	Cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	28-40	Very cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	40-50	Very gravelly clay	CL	A-7-6	0-10	15-60	45-90	40-85	30-85
	50-71	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85
	71-84	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-5	Very gravelly loam	GC	A-2-6	0	10-25	40-55	35-50	30-50
	5-10	Very gravelly clay loam	GC	A-6	0	10-50	40-80	35-75	30-75
	10-25	Extremely gravelly sandy clay loam	GC	A-2-6	0	10-50	40-80	35-75	30-75
	25	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
636:									
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-5	Very gravelly loam	GC	A-2-6	0	10-25	40-55	35-50	30-50
	5-10	Very gravelly clay loam	GC	A-6	0	10-50	40-80	35-75	30-75
	10-25	Extremely gravelly sandy clay loam	GC	A-2-6	0	10-50	40-80	35-75	30-75
	25	Bedrock	---	---	---	---	---	---	---
Ultic Haploxeralfs, conglomerate, very deep-------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-6	Gravelly clay loam	CL	A-6	0-6	0-15	45-80	40-75	30-75
	6-10	Gravelly clay loam	CL	A-6	0-10	0-45	45-90	40-85	30-80
	10-17	Clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	17-28	Cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	28-40	Very cobbly clay loam	CL	A-7-6	0-10	0-45	45-90	40-85	30-80
	40-50	Very gravelly clay	CL	A-7-6	0-10	15-60	45-90	40-85	30-85
	50-71	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85
	71-84	Very gravelly sandy clay loam	SC	A-6	0-10	15-60	45-90	40-85	30-85

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
637:									
Ultic Haploxeralfs, sandstone--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Very fine sandy loam	CL-ML	A-4	0	0	75-99	70-94	50-90
	2-6	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	6-11	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	11-17	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	17-24	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	24-32	Very gravelly very fine sandy loam	GC	A-2-4	0	0-40	40-100	35-99	35-95
	32-53	Very gravelly sandy clay loam	GC	A-2-6	0-55	15-55	15-50	10-45	5-40
	53-65	Weathered bedrock	---	---	---	---	0	0	0
638:									
Ultic Haploxeralfs, sandstone--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Very fine sandy loam	CL-ML	A-4	0	0	75-99	70-94	50-90
	2-6	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	6-11	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	11-17	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	17-24	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	24-32	Very gravelly very fine sandy loam	GC	A-2-4	0	0-40	40-100	35-99	35-95
	32-53	Very gravelly sandy clay loam	GC	A-2-6	0-55	15-55	15-50	10-45	5-40
	53-65	Weathered bedrock	---	---	---	---	0	0	0

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
639:									
Ultic Haploxeralfs, sandstone--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Very fine sandy loam	CL-ML	A-4	0	0	75-99	70-94	50-90
	2-6	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	6-11	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	11-17	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	17-24	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	24-32	Very gravelly very fine sandy loam	GC	A-2-4	0	0-40	40-100	35-99	35-95
	32-53	Very gravelly sandy clay loam	GC	A-2-6	0-55	15-55	15-50	10-45	5-40
	53-65	Weathered bedrock	---	---	---	---	0	0	0
640:									
Ultic Haploxeralfs, sandstone--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Very fine sandy loam	CL-ML	A-4	0	0	75-99	70-94	50-90
	2-6	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	6-11	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	11-17	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	17-24	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	24-32	Very gravelly very fine sandy loam	GC	A-2-4	0	0-40	40-100	35-99	35-95
	32-53	Very gravelly sandy clay loam	GC	A-2-6	0-55	15-55	15-50	10-45	5-40
	53-65	Weathered bedrock	---	---	---	---	0	0	0

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
641:									
Ultic Haploxeralfs, sandstone--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Very fine sandy loam	CL-ML	A-4	0	0	75-99	70-94	50-90
	2-6	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	6-11	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	11-17	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	17-24	Very fine sandy loam	CL	A-4	0	0-40	40-100	35-99	35-95
	24-32	Very gravelly very fine sandy loam	GC	A-2-4	0	0-40	40-100	35-99	35-95
	32-53	Very gravelly sandy clay loam	GC	A-2-6	0-55	15-55	15-50	10-45	5-40
	53-65	Weathered bedrock	---	---	---	---	0	0	0
642:									
Chinacamp gravelly loam--------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-5	Gravelly loam	GM	A-7-5	0-25	0-30	60-95	55-90	40-85
	5-15	Gravelly clay loam	MH	A-7-5	0-50	10-60	45-95	40-90	30-90
	15-29	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90
	29-38	Gravelly clay loam	CH	A-7-6	0-50	10-60	45-95	40-90	30-90
	38-44	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90
	44-61	Extremely stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90
	61-72	Very stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
643:									
Chinacamp gravelly loam--------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-5	Gravelly loam	GM	A-7-5	0-25	0-30	60-95	55-90	40-85
	5-15	Gravelly clay loam	MH	A-7-5	0-50	10-60	45-95	40-90	30-90
	15-29	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90
	29-38	Gravelly clay loam	CH	A-7-6	0-50	10-60	45-95	40-90	30-90
	38-44	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90
	44-61	Extremely stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90
	61-72	Very stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90
644:									
Chinacamp gravelly loam--------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-5	Gravelly loam	GM	A-7-5	0-25	0-30	60-95	55-90	40-85
	5-15	Gravelly clay loam	MH	A-7-5	0-50	10-60	45-95	40-90	30-90
	15-29	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90
	29-38	Gravelly clay loam	CH	A-7-6	0-50	10-60	45-95	40-90	30-90
	38-44	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90
	44-61	Extremely stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90
	61-72	Very stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
645:									
Chinacamp gravelly loam--------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-5	Gravelly loam	GM	A-7-5	0-25	0-30	60-95	55-90	40-85
	5-15	Gravelly clay loam	MH	A-7-5	0-50	10-60	45-95	40-90	30-90
	15-29	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90
	29-38	Gravelly clay loam	CH	A-7-6	0-50	10-60	45-95	40-90	30-90
	38-44	Gravelly clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90
	44-61	Extremely stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90
	61-72	Very stony clay loam	CL	A-7-6	0-50	10-60	45-95	40-90	30-90
646:									
Coalcanyon taxadjunct very gravelly loam-----------------	0-2	Very gravelly loam	ML	A-7-6	0-60	15-40	55-75	50-70	40-65
	2-6	Very gravelly loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	6-14	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	14-24	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	24-42	Extremely cobbly clay loam	GC	A-7-6	0-60	25-50	50-95	45-90	40-90
	42-54	Very cobbly clay	CH	A-7-6	0-60	15-50	50-95	45-90	40-90
	54-72	Very gravelly clay loam	GC	A-7-6	0-60	15-50	50-95	45-90	40-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
647:									
Coalcanyon taxadjunct very gravelly loam	0-2	Very gravelly loam	ML	A-7-6	0-60	15-40	55-75	50-70	40-65
	2-6	Very gravelly loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	6-14	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	14-24	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	24-42	Extremely cobbly clay loam	GC	A-7-6	0-60	25-50	50-95	45-90	40-90
	42-54	Very cobbly clay	CH	A-7-6	0-60	15-50	50-95	45-90	40-90
	54-72	Very gravelly clay loam	GC	A-7-6	0-60	15-50	50-95	45-90	40-90
648:									
Coalcanyon taxadjunct very gravelly loam	0-2	Very gravelly loam	ML	A-7-6	0-60	15-40	55-75	50-70	40-65
	2-6	Very gravelly loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	6-14	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	14-24	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	24-42	Extremely cobbly clay loam	GC	A-7-6	0-60	25-50	50-95	45-90	40-90
	42-54	Very cobbly clay	CH	A-7-6	0-60	15-50	50-95	45-90	40-90
	54-72	Very gravelly clay loam	GC	A-7-6	0-60	15-50	50-95	45-90	40-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
649:									
Coalcanyon taxadjunct very gravelly loam	0-2	Very gravelly loam	ML	A-7-6	0-60	15-40	55-75	50-70	40-65
	2-6	Very gravelly loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	6-14	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	14-24	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	24-42	Extremely cobbly clay loam	GC	A-7-6	0-60	25-50	50-95	45-90	40-90
	42-54	Very cobbly clay	CH	A-7-6	0-60	15-50	50-95	45-90	40-90
	54-72	Very gravelly clay loam	GC	A-7-6	0-60	15-50	50-95	45-90	40-90
650:									
Schott very gravelly loam	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-5	0-10	0-15	55-95	50-90	30-85
	6-13	Very gravelly clay loam	ML	A-7-6	0-15	0-45	25-80	20-75	15-75
	13-22	Very cobbly clay loam	CL	A-7-6	0-15	0-45	25-80	20-75	15-75
	22-40	Extremely gravelly clay loam	GC	A-7-6	0-15	0-45	25-80	20-75	15-75
	40-50	Extremely gravelly sandy clay loam	GC	A-2-7	0-15	0-45	25-80	20-75	15-75
	50	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
651:									
Schott very gravelly loam------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-5	0-10	0-15	55-95	50-90	30-85
	6-13	Very gravelly clay loam	ML	A-7-6	0-15	0-45	25-80	20-75	15-75
	13-22	Very cobbly clay loam	CL	A-7-6	0-15	0-45	25-80	20-75	15-75
	22-40	Extremely gravelly clay loam	GC	A-7-6	0-15	0-45	25-80	20-75	15-75
	40-50	Extremely gravelly sandy clay loam	GC	A-2-7	0-15	0-45	25-80	20-75	15-75
	50	Bedrock	---	---	---	---	---	---	---
652:									
Schott very gravelly loam------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-5	0-10	0-15	55-95	50-90	30-85
	6-13	Very gravelly clay loam	ML	A-7-6	0-15	0-45	25-80	20-75	15-75
	13-22	Very cobbly clay loam	CL	A-7-6	0-15	0-45	25-80	20-75	15-75
	22-40	Extremely gravelly clay loam	GC	A-7-6	0-15	0-45	25-80	20-75	15-75
	40-50	Extremely gravelly sandy clay loam	GC	A-2-7	0-15	0-45	25-80	20-75	15-75
	50	Bedrock	---	---	---	---	---	---	---
Rock outcrop, mudflow breccia.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
654:									
Coridge bouldery loam----------	0-1	Bouldery loam	ML	A-7-6	0-45	0-15	55-95	50-90	40-85
	1-6	Gravelly loam	SC	A-6	0-40	0-25	55-80	50-75	40-75
	6-12	Gravelly clay loam	CL	A-7-6	0-40	0-25	55-80	50-75	40-75
	12-19	Very gravelly clay loam	CL	A-7-6	0-40	0-25	55-80	50-75	40-75
	19-24	Very gravelly clay	GC	A-7-6	0-60	10-30	55-90	50-85	45-83
	24	Bedrock	---	---	---	---	---	---	---
Rock outcrop, Cohasset basalt.									
655:									
Coridge bouldery loam----------	0-1	Bouldery loam	ML	A-7-6	0-45	0-15	55-95	50-90	40-85
	1-6	Gravelly loam	SC	A-6	0-40	0-25	55-80	50-75	40-75
	6-12	Gravelly clay loam	CL	A-7-6	0-40	0-25	55-80	50-75	40-75
	12-19	Very gravelly clay loam	CL	A-7-6	0-40	0-25	55-80	50-75	40-75
	19-24	Very gravelly clay	GC	A-7-6	0-60	10-30	55-90	50-85	45-83
	24	Bedrock	---	---	---	---	---	---	---
Rock outcrop, Cohasset basalt.									
656:									
Rock outcrop, basalt cliffs.									
Coalcanyon taxadjunct very gravelly loam-----------	0-2	Very gravelly loam	ML	A-7-6	0-60	15-40	55-75	50-70	40-65
	2-6	Very gravelly loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	6-14	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	14-24	Very gravelly clay loam	CL	A-7-6	0-60	25-50	50-95	45-90	40-90
	24-42	Extremely cobbly clay loam	GC	A-7-6	0-60	25-50	50-95	45-90	40-90
	42-54	Very cobbly clay	CH	A-7-6	0-60	15-50	50-95	45-90	40-90
	54-72	Very gravelly clay loam	GC	A-7-6	0-60	15-50	50-95	45-90	40-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
657:									
Bonneyridge sandy loam---------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60
	19	Bedrock	---	---	---	---	---	---	---
Rock outcrop, quartz diorite.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
658:									
Bonneyridge sandy loam---------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60
	19	Bedrock	---	---	---	---	---	---	---
Rock outcrop, quartz diorite.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
659:									
Bonneyridge sandy loam---------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60
	19	Bedrock	---	---	---	---	---	---	---
Rock outcrop, quartz diorite.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
660:									
Bonneyridge sandy loam---------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60
	19	Bedrock	---	---	---	---	---	---	---
Rock outcrop, quartz diorite.									
661:									
Millerridge gravelly sandy clay loam---------------------------	0-2	Gravelly sandy clay loam	SM	A-7-5	0-15	0-15	65-93	60-88	50-83
	2-6	Stony sandy clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90
	6-12	Cobbly clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90
	12-20	Cobbly clay loam	CL	A-7-6	0-15	10-40	60-95	55-90	45-90
	20-26	Gravelly clay	CH	A-7-6	0-15	10-40	60-95	55-90	45-90
	26	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
661:									
Boxrobber cobbly sandy clay loam	0-2	Cobbly sandy clay loam	SM	A-7-5	0-10	0-40	80-90	75-85	60-80
	2-8	Very gravelly sandy clay loam	SC	A-2-7	0-10	0-40	55-80	50-75	40-75
	8-16	Very gravelly clay loam	GC	A-7-6	0-10	0-40	55-80	50-75	40-75
	16-30	Weathered bedrock	---	---	---	---	---	---	---
	30	Bedrock	---	---	---	---	---	---	---
662:									
Millerridge gravelly sandy clay loam	0-2	Gravelly sandy clay loam	SM	A-7-5	0-15	0-15	65-93	60-88	50-83
	2-6	Stony sandy clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90
	6-12	Cobbly clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90
	12-20	Cobbly clay loam	CL	A-7-6	0-15	10-40	60-95	55-90	45-90
	20-26	Gravelly clay	CH	A-7-6	0-15	10-40	60-95	55-90	45-90
	26	Bedrock	---	---	---	---	---	---	---
Boxrobber cobbly sandy clay loam	0-2	Cobbly sandy clay loam	SM	A-7-5	0-10	0-40	80-90	75-85	60-80
	2-8	Very gravelly sandy clay loam	SC	A-2-7	0-10	0-40	55-80	50-75	40-75
	8-16	Very gravelly clay loam	GC	A-7-6	0-10	0-40	55-80	50-75	40-75
	16-30	Weathered bedrock	---	---	---	---	---	---	---
	30	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
663:									
Millerridge gravelly sandy clay loam	0-2	Gravelly sandy clay loam	SM	A-7-5	0-15	0-15	65-93	60-88	50-83
	2-6	Stony sandy clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90
	6-12	Cobbly clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90
	12-20	Cobbly clay loam	CL	A-7-6	0-15	10-40	60-95	55-90	45-90
	20-26	Gravelly clay	CH	A-7-6	0-15	10-40	60-95	55-90	45-90
	26	Bedrock	---	---	---	---	---	---	---
Boxrobber cobbly sandy clay loam	0-2	Cobbly sandy clay loam	SM	A-7-5	0-10	0-40	80-90	75-85	60-80
	2-8	Very gravelly sandy clay loam	SC	A-2-7	0-10	0-40	55-80	50-75	40-75
	8-16	Very gravelly clay loam	GC	A-7-6	0-10	0-40	55-80	50-75	40-75
	16-30	Weathered bedrock	---	---	---	---	---	---	---
	30	Bedrock	---	---	---	---	---	---	---
664:									
Millerridge gravelly sandy clay loam	0-2	Gravelly sandy clay loam	SM	A-7-5	0-15	0-15	65-93	60-88	50-83
	2-6	Stony sandy clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90
	6-12	Cobbly clay loam	CL	A-7-6	0-15	0-30	60-95	55-90	45-90
	12-20	Cobbly clay loam	CL	A-7-6	0-15	10-40	60-95	55-90	45-90
	20-26	Gravelly clay	CH	A-7-6	0-15	10-40	60-95	55-90	45-90
	26	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
664:									
Boxrobber cobbly sandy clay loam----------	0-2	Cobbly sandy clay loam	SM	A-7-5	0-10	0-40	80-90	75-85	60-80
	2-8	Very gravelly sandy clay loam	SC	A-2-7	0-10	0-40	55-80	50-75	40-75
	8-16	Very gravelly clay loam	GC	A-7-6	0-10	0-40	55-80	50-75	40-75
	16-30	Weathered bedrock	---	---	---	---	---	---	---
	30	Bedrock	---	---	---	---	---	---	---
665:									
Surnuf gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-10
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-10
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
Bigridge loam----------	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	51-62	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
666:									
Surnuf gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-10
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-10
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
Bigridge loam----------	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	51-62	Bedrock	---	---	0	0	---	---	---
667:									
Surnuf gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-10
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-10
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
667:									
Bigridge loam	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	51-62	Bedrock	---	---	0	0	---	---	---
668:									
Surnuf gravelly loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-10
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-10
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
Bigridge loam	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	51-62	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passi sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
669:									
Oroshore gravelly loam---------	0-2	Gravelly loam	CL	A-7-6	0	0-15	45-90	40-85	35-80
	2-15	Gravelly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75
	15-28	Very cobbly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75
	28-34	Extremely gravelly clay loam	GC	A-2-7	0-30	0-55	30-80	25-75	20-75
	34	Bedrock	---	---	---	---	---	---	---
Mounthope loam-----------------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85
	52	Bedrock	---	---	0	0	---	---	---
Dunstone gravelly loam---------	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	15-37	Weathered bedrock	---	---	0	0	---	---	---
	37	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
670:									
Oroshore gravelly loam---------	0-2	Gravelly loam	CL	A-7-6	0	0-15	45-90	40-85	35-80
	2-15	Gravelly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75
	15-28	Very cobbly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75
	28-34	Extremely gravelly clay loam	GC	A-2-7	0-30	0-55	30-80	25-75	20-75
	34	Bedrock	---	---	---	---	---	---	---
Mounthope loam-----------------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85
	52	Bedrock	---	---	0	0	---	---	---
Dunstone gravelly loam---------	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	15-37	Weathered bedrock	---	---	0	0	---	---	---
	37	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
671:									
Oroshore gravelly loam---------	0-2	Gravelly loam	CL	A-7-6	0	0-15	45-90	40-85	35-80
	2-15	Gravelly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75
	15-28	Very cobbly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75
	28-34	Extremely gravelly clay loam	GC	A-2-7	0-30	0-55	30-80	25-75	20-75
	34	Bedrock	---	---	---	---	---	---	---
Mounthope loam-----------------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85
	52	Bedrock	---	---	0	0	---	---	---
Dunstone gravelly loam---------	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	15-37	Weathered bedrock	---	---	0	0	---	---	---
	37	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
672:									
Oroshore gravelly loam---------	0-2	Gravelly loam	CL	A-7-6	0	0-15	45-90	40-85	35-80
	2-15	Gravelly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75
	15-28	Very cobbly clay loam	CL	A-7-6	0-30	0-55	30-80	25-75	20-75
	28-34	Extremely gravelly clay loam	GC	A-2-7	0-30	0-55	30-80	25-75	20-75
	34	Bedrock	---	---	---	---	---	---	---
Mounthope loam-----------------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Loam	CL	A-6	0	0	60-100	55-100	40-95
	3-7	Loam	CL	A-6	0	0	90-100	85-100	70-95
	7-15	Loam	CL	A-6	0	0	90-100	85-100	70-95
	15-22	Gravelly clay loam	CL	A-6	0	0-10	65-95	60-90	55-85
	22-26	Gravelly clay loam	GC	A-6	0	0-10	60-95	60-90	50-85
	26-31	Very gravelly clay loam	GC	A-7-6	0	0-10	40-95	35-90	30-85
	31-42	Very gravelly clay loam	GC	A-6	0	0-10	40-95	35-90	30-85
	42-52	Gravelly clay loam	GC	A-7-6	0	0-10	60-95	55-90	50-85
	52	Bedrock	---	---	0	0	---	---	---
Dunstone gravelly loam---------	0-4	Gravelly loam	SM	A-7-6	0	0-10	75-95	70-90	60-85
	4-6	Gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85
	6-10	Gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	10-15	Very gravelly loam	GC	A-2-6	0	0-10	55-100	50-100	40-95
	15-37	Weathered bedrock	---	---	0	0	---	---	---
	37	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
674:									
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60
	19	Bedrock	---	---	---	---	---	---	---
Bonneyridge sandy loam---------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60
Rock outcrop, quartz diorite.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
675:									
Clearhayes sandy clay loam-----	0-2	Sandy clay loam	SC	A-7-6	0	0-10	65-100	60-95	35-95
	2-10	Gravelly sandy clay loam	SC	A-7-6	0	0-25	55-95	50-90	40-90
	10-19	Gravelly sandy clay loam	SC	A-2-7	0	0-25	55-95	50-90	40-90
	19-28	Extremely gravelly sandy loam	GC	A-2-6	0-25	10-50	30-75	25-70	15-65
	28-38	Extremely gravelly loamy coarse sand	GP-GM	A-1-a	0-25	10-50	30-75	25-70	15-65
	38-46	Extremely gravelly sandy clay loam	GC	A-2-6	0-25	10-50	30-75	25-70	15-65
	46	Bedrock	---	---	---	---	---	---	---
Hamslough clay-----------	0-3	Clay	CH	A-7-6	0	0-25	80-95	75-90	65-90
	3-14	Cobbly clay	CH	A-7-6	0	0-25	80-95	75-90	65-90
	14-19	Extremely gravelly clay	GC	A-2-7	0	0-40	40-90	35-85	30-85
	19-27	Extremely gravelly sandy clay	GC	A-2-7	0	25-40	40-75	35-70	30-70
	27	Cemented material	---	---	---	---	---	---	---
676:									
Carhart clay-------------------	0-2	Clay	CH	A-7-5	0	0	90-100	85-100	75-10
	2-12	Clay	CH	A-7-6	0	0	90-100	85-100	75-10
	12-24	Clay	CH	A-7-6	0	0	90-100	85-100	75-10
	24-30	Clay	CH	A-7-6	0	0	90-100	85-100	75-10
	30	Bedrock	---	---	---	---	---	---	---
Anita taxadjunct clay----------	0-2	Clay	CH	A-7-5	0	0	90-100	85-100	75-10
	2-6	Clay	CH	A-7-6	0	0	90-100	85-100	75-10
	6-11	Clay	CH	A-7-6	0	0	90-100	85-100	75-10
	11	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
677:									
Tuscan gravelly loam----------	0-2	Gravelly loam	CL	A-7-6	0	0	65-95	60-90	50-85
	2-4	Clay loam	CL	A-7-6	0	0-40	40-95	35-90	30-90
	4-7	Gravelly clay	CH	A-7-6	0	0-40	40-95	35-90	30-90
	7-11	Cobbly clay	CH	A-7-6	0	0-40	40-95	35-90	30-90
	11	Cemented gravelly material	---	---	0	---	---	---	---
Fallager loam----------	0-1	Loam	ML	A-7-6	0	0-15	80-95	75-90	60-90
	1-3	Gravelly clay loam	CL	A-7-6	0	0-15	80-95	75-90	65-90
	3-7	Gravelly clay	CH	A-7-6	0	0-15	60-90	55-85	50-85
	7	Cemented gravelly material	---	---	---	---	---	---	---
Anita, gravelly duripan--------	0-3	Gravelly clay	CH	A-7-5	0	0-30	80-95	75-90	65-90
	3-8	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85
	8-15	Gravelly clay	CH	A-7-6	0	0-25	75-90	70-85	65-85
	15	Cemented gravelly material	---	---	0	0-65	---	---	---
679:									
Lucksev loam----------	0-2	Loam	CL	A-7-6	0	0-25	55-100	50-98	40-94
	2-7	Clay loam	CL	A-7-6	0	0-25	60-100	55-98	40-98
	7-15	Clay	CH	A-7-6	0	0-25	60-100	55-98	40-98
	15	Bedrock	---	---	---	---	---	---	---
Butteside gravelly loam--------	0-2	Gravelly loam	SC	A-6	0	0-10	75-100	70-95	55-95
	2-8	Clay loam	CL	A-7	0	0-25	75-100	70-95	55-95
	8-13	Clay loam	CL	A-7	0	0-25	75-100	70-95	55-95
	13-27	Clay	CH	A-7	0	0-25	75-100	70-95	55-95
	27	Bedrock	---	---	---	---	---	---	---
Carhart clay----------	0-2	Clay	CH	A-7-5	0	0	90-100	85-100	75-10
	2-12	Clay	CH	A-7-6	0	0	90-100	85-100	75-10
	12-24	Clay	CH	A-7-6	0	0	90-100	85-100	75-10
	24-30	Clay	CH	A-7-6	0	0	90-100	85-100	75-10
	30	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
680:									
Lucksev loam----------	0-2	Loam	CL	A-7-6	0	0-25	55-100	50-98	40-94
	2-7	Clay loam	CL	A-7-6	0	0-25	60-100	55-98	40-98
	7-15	Clay	CH	A-7-6	0	0-25	60-100	55-98	40-98
	15	Bedrock	---	---	---	---	---	---	---
Butteside gravelly loam--------	0-2	Gravelly loam	SC	A-6	0	0-10	75-100	70-95	55-95
	2-8	Clay loam	CL	A-7	0	0-25	75-100	70-95	55-95
	8-13	Clay loam	CL	A-7	0	0-25	75-100	70-95	55-95
	13-27	Clay	CH	A-7	0	0-25	75-100	70-95	55-95
	27	Bedrock	---	---	---	---	---	---	---
683:									
Typic Haploxeralfs, magnesic, low elevation----------	0-3	Very gravelly loam	GM	A-7-6	0-15	0-30	50-75	45-70	40-70
	3-10	Very gravelly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85
	10-21	Very cobbly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85
	21-30	Very gravelly clay	GC	A-7-6	0-25	0-60	50-90	45-85	40-85
	30	Bedrock	---	---	---	---	---	---	---
Earlal very gravelly loam------	0-3	Very gravelly loam	GM	A-7-5	0-30	15-40	55-75	50-70	40-65
	3-7	Very gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70
	7-14	Extremely gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70
	14	Bedrock	---	---	---	---	---	---	---
Rock outcrop, serpentinite.									
684:									
Typic Haploxeralfs, magnesic, low elevation----------	0-3	Very gravelly loam	GM	A-7-6	0-15	0-30	50-75	45-70	40-70
	3-10	Very gravelly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85
	10-21	Very cobbly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85
	21-30	Very gravelly clay	GC	A-7-6	0-25	0-60	50-90	45-85	40-85
	30	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
684:									
Earlal very gravelly loam------	0-3	Very gravelly loam	GM	A-7-5	0-30	15-40	55-75	50-70	40-65
	3-7	Very gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70
	7-14	Extremely gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70
	14	Bedrock	---	---	---	---	---	---	---
Rock outcrop, serpentinite.									
685:									
Bosquejo taxadjunct gravelly substratum----------	0-3	Clay	CH	A-7-5	0	0	95-100	90-100	80-10
	3-8	Clay	CH	A-7-5	0	0	95-100	90-100	80-10
	8-17	Clay	CH	A-7-6	0	0	90-100	85-100	75-10
	17-27	Clay	CH	A-7-6	0	0	90-100	85-100	75-10
	27-33	Gravelly clay	CH	A-7-6	0	0-25	15-100	10-100	5-10
	33-41	Very gravelly sandy clay	GC	A-2-7	0	0-25	15-100	10-100	5-10
	41-55	Very gravelly sandy clay	GC	A-2-7	0	0-25	15-100	10-100	5-10
	55-70	Sandy loam	SC	A-6	0	0-30	30-100	25-100	15-95
	70-81	Sandy loam	SC	A-4	0	0-30	30-100	25-100	15-95
686:									
Redsluff taxadjunct clay loam--	0-4	Clay loam	CL	A-7-6	0	0-5	90-100	85-100	80-10
	4-10	Sandy clay	CH	A-7-6	0	0	60-100	55-100	40-10
	10-21	Clay loam	CL	A-7-6	0	0	60-100	55-100	40-10
	21-32	Sandy clay loam	CL	A-7-6	0	0	60-100	55-100	40-10
	32-42	Sandy clay loam	CL	A-7-6	0	0	60-100	55-100	40-10
	42-53	Gravelly clay loam	CL	A-7-6	0	0-40	40-80	35-75	20-75
	53-68	Extremely gravelly sandy clay loam	GC	A-2-6	0	0-40	40-80	35-75	20-75
	68-75	Gravelly sandy clay loam	SC	A-6	0	0-40	40-80	35-75	20-75
	75-80	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
687:									
Xerorthents, shallow----------	0-2	Gravelly clay loam	CL	A-6	0-30	0-15	65-100	60-97	35-97
	2-5	Gravelly clay loam	CL	A-7-6	0-15	0-40	50-100	45-99	35-99
	5-8	Very cobbly clay loam	CL	A-7-6	0-15	0-40	50-100	45-99	35-99
	8	Bedrock	---	---	---	---	---	---	---
Typic Haploxeralfs gravelly loam----------	0-2	Gravelly loam	GC	A-6	0	0-25	65-95	60-90	50-90
	2-8	Gravelly clay loam	CL	A-6	0-40	0-45	45-95	40-90	30-90
	8-16	Very gravelly clay loam	CL	A-7-6	0-40	0-45	45-95	40-90	30-90
	16-27	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90
	27-40	Very gravelly clay loam	GC	A-7-6	0-40	0-45	45-95	40-90	30-90
	40	Bedrock	---	---	---	---	---	---	---
700:									
Retsongulch very gravelly sandy loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly sandy loam	GM	A-2-6	0-15	0-15	50-95	45-90	25-85
	3-12	Very gravelly sandy clay loam	GC	A-2-6	0-40	10-50	40-65	35-60	20-55
	12-21	Extremely gravelly sandy clay loam	GC	A-2-6	0-40	10-50	40-65	35-60	20-55
	21-30	Extremely gravelly sandy loam	GC-GM	A-2-4	0-40	10-50	40-65	35-60	20-55
	30	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
700:									
Flumewall gravelly sandy loam--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Gravelly sandy loam	SM	A-2-6	0-30	10-25	15-80	10-75	5-65
	2-7	Very gravelly sandy loam	SC	A-2-6	0-40	15-40	55-80	50-75	30-70
	7-18	Extremely stony sandy clay loam	SC	A-2-6	0-40	15-40	55-80	50-75	30-70
	18	Bedrock	---	---	---	---	---	---	---
701:									
Powellton gravelly loam--------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly loam	GM	A-7-5	0	0	45-95	40-90	25-85
	4-9	Gravelly loam	ML	A-7-5	0	0-10	75-100	70-96	60-96
	9-15	Loam	CL	A-7-6	0	0-10	75-100	70-96	60-96
	15-24	Clay loam	CL	A-7-6	0	0-10	75-100	70-96	60-96
	24-30	Clay loam	CL	A-6	0	0-10	75-100	70-96	60-96
	30-41	Silt loam	CL	A-6	0	0	65-100	60-100	50-10
	41-61	Loam	CL	A-6	0	0	65-100	60-100	50-10
	61-83	Loam	CL	A-4, A-6	0	0	65-100	60-100	50-10
Obstruction gravelly sandy loam	0-4	Slightly decomposed plant material	PT	---	---	---	---	---	---
	4-7	Gravelly sandy loam	SM	A-2-6	0-10	0-15	50-80	45-75	25-70
	7-10	Gravelly sandy clay loam	GC	A-2-6	0	0-25	60-95	55-90	35-85
	10-18	Gravelly fine sandy loam	SC	A-6	0	0-25	60-95	55-90	35-85
	18-25	Gravelly sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85
	25-33	Sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85
	33-44	Fine sandy loam	CL	A-6	0	0	50-100	45-96	25-91
	44-64	Gravelly fine sandy loam	SC-SM	A-4	0	0	50-100	45-96	25-91
	64-84	Gravelly fine sandy loam	SM	A-4	0	0	50-100	45-96	25-91
	84	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
702:									
Cerpone gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly loam	ML	A-7-5	0-10	0-15	55-80	50-75	40-70
	4-9	Gravelly loam	CL	A-6	0	0-30	60-90	55-85	40-80
	9-17	Cobbly loam	CL	A-6	0	0-30	60-90	55-85	40-80
	17-26	Gravelly clay loam	CL	A-7-6	0-10	0-25	30-80	25-75	20-75
	26-41	Very gravelly silty clay loam	GC	A-7-6	0-10	0-25	30-80	25-75	20-75
	41-57	Very gravelly silty clay loam	GC	A-2-7	0-10	0-25	30-80	25-75	20-75
	57	Bedrock	---	---	---	---	---	---	---
Typic Haploxeralfs, magnesic, very gravelly loam----------	0-3	Very gravelly loam	GC	A-6	0-15	0-30	50-75	45-70	40-70
	3-7	Gravelly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85
	7-12	Very gravelly clay loam	GC	A-7-6	0-25	0-60	50-90	45-85	40-85
	12-18	Gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85
	18-24	Very gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85
	24-32	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60
	32-42	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60
	42-54	Extremely cobbly clay loam	GC	A-7-6	0-25	0-60	30-65	25-60	20-60
	54	Bedrock	---	---	---	---	---	---	---
Earlal very gravelly loam------	0-3	Very gravelly loam	GM	A-7-5	0-30	15-40	55-75	50-70	40-65
	3-7	Very gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70
	7-14	Extremely gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70
	14	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
703:									
Cerpone gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly loam	ML	A-7-5	0-10	0-15	55-80	50-75	40-70
	4-9	Gravelly loam	CL	A-6	0	0-30	60-90	55-85	40-80
	9-17	Cobbly loam	CL	A-6	0	0-30	60-90	55-85	40-80
	17-26	Gravelly clay loam	CL	A-7-6	0-10	0-25	30-80	25-75	20-75
	26-41	Very gravelly silty clay loam	GC	A-7-6	0-10	0-25	30-80	25-75	20-75
	41-57	Very gravelly silty clay loam	GC	A-2-7	0-10	0-25	30-80	25-75	20-75
	57	Bedrock	---	---	---	---	---	---	---
Typic Haploxeralfs, magnesic, very gravelly loam----------	0-3	Very gravelly loam	GC	A-6	0-15	0-30	50-75	45-70	40-70
	3-7	Gravelly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85
	7-12	Very gravelly clay loam	GC	A-7-6	0-25	0-60	50-90	45-85	40-85
	12-18	Gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85
	18-24	Very gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85
	24-32	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60
	32-42	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60
	42-54	Extremely cobbly clay loam	GC	A-7-6	0-25	0-60	30-65	25-60	20-60
	54	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
703:									
Earlal very gravelly loam------	0-3	Very gravelly loam	GM	A-7-5	0-30	15-40	55-75	50-70	40-65
	3-7	Very gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70
	7-14	Extremely gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70
	14	Bedrock	---	---	---	---	---	---	---
Rock outcrop, serpentinite.									
704:									
Typic Haploxeralfs, magnesic, very gravelly loam----------	0-3	Very gravelly loam	GC	A-6	0-15	0-30	50-75	45-70	40-70
	3-7	Gravelly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85
	7-12	Very gravelly clay loam	GC	A-7-6	0-25	0-60	50-90	45-85	40-85
	12-18	Gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85
	18-24	Very gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85
	24-32	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60
	32-42	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60
	42-54	Extremely cobbly clay loam	GC	A-7-6	0-25	0-60	30-65	25-60	20-60
	54	Bedrock	---	---	---	---	---	---	---
Earlal very gravelly loam------	0-3	Very gravelly loam	GM	A-7-5	0-30	15-40	55-75	50-70	40-65
	3-7	Very gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70
	7-14	Extremely gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70
	14	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
704:									
Cerpone gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly loam	ML	A-7-5	0-10	0-15	55-80	50-75	40-70
	4-9	Gravelly loam	CL	A-6	0	0-30	60-90	55-85	40-80
	9-17	Cobbly loam	CL	A-6	0	0-30	60-90	55-85	40-80
	17-26	Gravelly clay loam	CL	A-7-6	0-10	0-25	30-80	25-75	20-75
	26-41	Very gravelly silty clay loam	GC	A-7-6	0-10	0-25	30-80	25-75	20-75
	41-57	Very gravelly silty clay loam	GC	A-2-7	0-10	0-25	30-80	25-75	20-75
	57	Bedrock	---	---	---	---	---	---	---
Rock outcrop, serpentinite.									
705:									
Typic Haploxeralfs, magnesic, very gravelly loam----------	0-3	Very gravelly loam	GC	A-6	0-15	0-30	50-75	45-70	40-70
	3-7	Gravelly clay loam	CL	A-7-6	0-25	0-60	50-90	45-85	40-85
	7-12	Very gravelly clay loam	GC	A-7-6	0-25	0-60	50-90	45-85	40-85
	12-18	Gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85
	18-24	Very gravelly clay	CH	A-7-6	0-25	0-60	50-90	45-85	40-85
	24-32	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60
	32-42	Very gravelly clay	GC	A-7-6	0-25	0-60	30-65	25-60	20-60
	42-54	Extremely cobbly clay loam	GC	A-7-6	0-25	0-60	30-65	25-60	20-60
	54	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
705:									
Earlal very gravelly loam------	0-3	Very gravelly loam	GM	A-7-5	0-30	15-40	55-75	50-70	40-65
	3-7	Very gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70
	7-14	Extremely gravelly clay loam	GC	A-7-6	0-30	30-55	50-75	45-70	40-70
	14	Bedrock	---	---	---	---	---	---	---
Cerpone gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly loam	ML	A-7-5	0-10	0-15	55-80	50-75	40-70
	4-9	Gravelly loam	CL	A-6	0	0-30	60-90	55-85	40-80
	9-17	Cobbly loam	CL	A-6	0	0-30	60-90	55-85	40-80
	17-26	Gravelly clay loam	CL	A-7-6	0-10	0-25	30-80	25-75	20-75
	26-41	Very gravelly silty clay loam	GC	A-7-6	0-10	0-25	30-80	25-75	20-75
	41-57	Very gravelly silty clay loam	GC	A-2-7	0-10	0-25	30-80	25-75	20-75
	57	Bedrock	---	---	---	---	---	---	---
Rock outcrop, serpentinite.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
711:									
Dixmine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-6	0	0-10	40-80	35-75	30-70
	6-11	Very gravelly loam	GM	A-7-6	0	0-30	55-80	50-75	40-75
	11-17	Gravelly loam	CL	A-6	0	0-30	55-80	50-75	40-75
	17-30	Very cobbly clay loam	CL	A-7-6	0	0-50	30-80	25-75	20-75
	30-41	Very gravelly clay loam	GC	A-7-6	0	0-50	30-80	25-75	20-75
	41-54	Extremely cobbly clay loam	GC	A-6	0	0-50	30-80	25-75	20-75
	54	Bedrock	---	---	---	---	---	---	---
Toadtown loam-------------------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-5	Loam	OH	A-7-5	0	0	45-95	40-90	35-85
	5-8	Loam	MH	A-7-5	0	0-15	75-95	70-90	60-90
	8-13	Clay loam	ML	A-7-6	0	0-15	75-95	70-90	60-90
	13-18	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-10
	18-27	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-10
	27-51	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-10
	51-65	Loam	CL	A-6	0	0	80-100	75-100	60-10
	65-75	Loam	CL	A-6	0	0	80-100	75-100	60-10
	75-79	Loam			---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
712:									
Dixmine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-6	0	0-10	40-80	35-75	30-70
	6-11	Very gravelly loam	GM	A-7-6	0	0-30	55-80	50-75	40-75
	11-17	Gravelly loam	CL	A-6	0	0-30	55-80	50-75	40-75
	17-30	Very cobbly clay loam	CL	A-7-6	0	0-50	30-80	25-75	20-75
	30-41	Very gravelly clay loam	GC	A-7-6	0	0-50	30-80	25-75	20-75
	41-54	Extremely cobbly clay loam	GC	A-6	0	0-50	30-80	25-75	20-75
	54	Bedrock	---	---	---	---	---	---	---
Toadtown loam-------------------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-5	Loam	OH	A-7-5	0	0	45-95	40-90	35-85
	5-8	Loam	MH	A-7-5	0	0-15	75-95	70-90	60-90
	8-13	Clay loam	ML	A-7-6	0	0-15	75-95	70-90	60-90
	13-18	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-10
	18-27	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-10
	27-51	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-10
	51-65	Loam	CL	A-6	0	0	80-100	75-100	60-10
	65-75	Loam	CL	A-6	0	0	80-100	75-100	60-10
	75-79	Loam			---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
713:									
Dixmine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-6	0	0-10	40-80	35-75	30-70
	6-11	Very gravelly loam	GM	A-7-6	0	0-30	55-80	50-75	40-75
	11-17	Gravelly loam	CL	A-6	0	0-30	55-80	50-75	40-75
	17-30	Very cobbly clay loam	CL	A-7-6	0	0-50	30-80	25-75	20-75
	30-41	Very gravelly clay loam	GC	A-7-6	0	0-50	30-80	25-75	20-75
	41-54	Extremely cobbly clay loam	GC	A-6	0	0-50	30-80	25-75	20-75
	54	Bedrock	---	---	---	---	---	---	---
Toadtown loam-------------------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-5	Loam	OH	A-7-5	0	0	45-95	40-90	35-85
	5-8	Loam	MH	A-7-5	0	0-15	75-95	70-90	60-90
	8-13	Clay loam	ML	A-7-6	0	0-15	75-95	70-90	60-90
	13-18	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-10
	18-27	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-10
	27-51	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-10
	51-65	Loam	CL	A-6	0	0	80-100	75-100	60-10
	65-75	Loam	CL	A-6	0	0	80-100	75-100	60-10
	75-79	Loam			---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
714:									
Dixmine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-6	0	0-10	40-80	35-75	30-70
	6-11	Very gravelly loam	GM	A-7-6	0	0-30	55-80	50-75	40-75
	11-17	Gravelly loam	CL	A-6	0	0-30	55-80	50-75	40-75
	17-30	Very cobbly clay loam	CL	A-7-6	0	0-50	30-80	25-75	20-75
	30-41	Very gravelly clay loam	GC	A-7-6	0	0-50	30-80	25-75	20-75
	41-54	Extremely cobbly clay loam	GC	A-6	0	0-50	30-80	25-75	20-75
	54	Bedrock	---	---	---	---	---	---	---
Toadtown loam-------------------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-5	Loam	OH	A-7-5	0	0	45-95	40-90	35-85
	5-8	Loam	MH	A-7-5	0	0-15	75-95	70-90	60-90
	8-13	Clay loam	ML	A-7-6	0	0-15	75-95	70-90	60-90
	13-18	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-10
	18-27	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-10
	27-51	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-10
	51-65	Loam	CL	A-6	0	0	80-100	75-100	60-10
	65-75	Loam	CL	A-6	0	0	80-100	75-100	60-10
	75-79	Loam			---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
715:									
Logtrain gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0-10	0-15	30-65	25-60	15-55
	3-9	Very gravelly loam	GM	A-7-6	0-55	0-55	15-80	10-75	5-70
	9-21	Very gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70
	21-38	Very cobbly loam	CL	A-6	0-55	0-55	15-80	10-75	5-70
	38-54	Extremely gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70
	54	Bedrock	---	---	---	---	---	---	---
Bottlehill very gravelly loam--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Very gravelly loam	GM	A-7-5	0-10	0-10	30-55	25-50	15-50
	4-9	Very gravelly loam	GM	A-2-7	0-10	0-10	30-55	25-50	15-50
	9-13	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50
	13-22	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50
	22-33	Extremely gravelly clay loam	GC	A-2-7	0-45	0-45	20-35	15-30	10-30
	33	Bedrock	---	---	---	---	---	---	---
Walkermine very gravelly loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-2-7	0-55	0-30	30-75	25-70	15-65
	3-12	Very gravelly loam	GM	A-2-7	0-55	0-55	20-65	20-60	15-55
	12	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
716:									
Griffgulch very gravelly silt loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	58	Bedrock	---	---	---	---	---	---	---
Surnuf gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-10
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-10
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
717:									
Griffgulch very gravelly silt loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	58	Bedrock	---	---	---	---	---	---	---
Surnuf gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-10
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-10
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
718:									
Griffgulch very gravelly silt loam	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	58	Bedrock	---	---	---	---	---	---	---
Surnuf gravelly loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-10
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-10
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
Spine taxadjunct very cobbly loam	0-2	Very cobbly loam	MH	A-7-5	0-50	15-50	30-80	25-75	20-70
	2-15	Very cobbly clay loam	CL	A-7-6	0-60	30-55	30-80	25-75	20-75
	15	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
719:									
Griffgulch very gravelly silt loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-7	Very gravelly silt loam	GM	A-7-5	0-25	0-45	45-90	40-85	35-85
	7-11	Very cobbly silty clay loam	ML	A-7-5	0-25	10-50	55-80	50-75	45-75
	11-20	Extremely cobbly silty clay loam	CL	A-7-6	0-25	10-50	55-80	50-75	45-75
	20-33	Very cobbly silty clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	33-47	Very cobbly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	47-58	Extremely gravelly clay	CH	A-7-6	15-30	15-55	55-80	50-75	45-75
	58	Bedrock	---	---	---	---	---	---	---
Surnuf gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-10
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-10
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
Spine taxadjunct very cobbly loam----------	0-2	Very cobbly loam	MH	A-7-5	0-50	15-50	30-80	25-75	20-70
	2-15	Very cobbly clay loam	CL	A-7-6	0-60	30-55	30-80	25-75	20-75
	15	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
720:									
Dystroxerepts extremely gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Extremely gravelly loam	GC	A-2-7	10-40	10-25	50-60	45-55	30-50
	4-12	Extremely gravelly clay loam	CL	A-7-6	0-45	25-65	40-80	35-75	20-75
	12-22	Extremely gravelly clay loam	GC	A-6	0-45	25-65	40-80	35-75	20-75
	22-28	Extremely gravelly loam	GC	A-2-6	0-45	25-65	40-80	35-75	20-75
	28-38	Extremely cobbly sandy clay loam	GC	A-2-6	0-45	25-65	40-80	35-75	20-75
	38	Bedrock	---	---	---	---	---	---	---
Haploxeralfs very gravelly loam	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-4	Very gravelly loam	GC	A-8	0-45	0-25	40-90	35-85	20-80
	4-9	Very gravelly clay loam	GC	A-7-6	0-55	0-50	40-80	35-75	30-75
	9-13	Very gravelly clay loam	GC	A-7-6	0-55	0-50	40-80	35-75	30-75
	13-22	Extremely gravelly clay loam	GC	A-2-7	0-55	0-50	40-80	35-75	30-75
	22-31	Extremely gravelly clay loam	GC	A-7-6	0-55	0-50	40-80	35-75	30-75
	31-47	Extremely gravelly clay loam	GC	A-7-6	0-55	0-50	40-80	35-75	30-75
	47	Bedrock	---	---	---	---	---	---	---
Rock outcrop, metavolcanic.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
721:									
Haploxerands, granitic till, medial sandy loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-5	Medial sandy loam	---	---	0-90	0-40	55-95	50-90	30-65
	5-12	Medial sandy loam	---	---	0-90	0-40	55-95	50-90	30-65
	12-22	Stony medial sandy loam	---	---	10-90	10-45	80-95	75-90	40-65
	22-41	Stony coarse sandy loam	SM	A-2-4	0-99	0-40	30-95	25-90	15-70
	41-55	Extremely bouldery coarse sandy loam	SM	A-2-4	0-99	0-40	30-95	25-90	15-70
	55-74	Extremely cobbly loamy coarse sand	SM	A-1-b	0-99	0-40	30-95	25-90	15-70
	74-87	Extremely bouldery loamy coarse sand	SM	A-2-4	0-99	0-40	30-95	25-90	15-70

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
722:									
Haploxerands, granitic till, medial sandy loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-5	Medial sandy loam	---	---	0-90	0-40	55-95	50-90	30-65
	5-12	Medial sandy loam	---	---	0-90	0-40	55-95	50-90	30-65
	12-22	Stony medial sandy loam	---	---	10-90	10-45	80-95	75-90	40-65
	22-41	Stony coarse sandy loam	SM	A-2-4	0-99	0-40	30-95	25-90	15-70
	41-55	Extremely bouldery coarse sandy loam	SM	A-2-4	0-99	0-40	30-95	25-90	15-70
	55-74	Extremely cobbly loamy coarse sand	SM	A-1-b	0-99	0-40	30-95	25-90	15-70
	74-87	Extremely bouldery loamy coarse sand	SM	A-2-4	0-99	0-40	30-95	25-90	15-70
723:									
Haploxerands, granitic till, medial sandy loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-5	Medial sandy loam	---	---	0-90	0-40	55-95	50-90	30-65
	5-12	Medial sandy loam	---	---	0-90	0-40	55-95	50-90	30-65
	12-22	Stony medial sandy loam	---	---	10-90	10-45	80-95	75-90	40-65
	22-41	Stony coarse sandy loam	SM	A-2-4	0-99	0-40	30-95	25-90	15-70
	41-55	Extremely bouldery coarse sandy loam	SM	A-2-4	0-99	0-40	30-95	25-90	15-70
	55-74	Extremely cobbly loamy coarse sand	SM	A-1-b	0-99	0-40	30-95	25-90	15-70
	74-87	Extremely bouldery loamy coarse sand	SM	A-2-4	0-99	0-40	30-95	25-90	15-70

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
724:									
Haploxerands, volcanic till, cobbly medial sandy loam------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-4	Cobbly medial sandy loam	---	---	0-45	15-30	60-95	55-90	35-65
	4-17	Cobbly medial sandy loam	---	---	10-60	15-45	55-95	50-90	30-65
	17-37	Gravelly sandy loam	SM	A-2-7	10-80	10-40	75-95	70-90	40-80
	37-41	Gravelly sandy loam	SM	A-2-7	10-80	10-40	75-95	70-90	40-80
	41-52	Gravelly material	SM	A-2-4	10-90	10-30	75-90	70-85	35-65
	52-80	Gravelly material	SM	A-2-4	10-90	10-30	75-90	70-85	35-65
725:									
Haploxerands, volcanic till, cobbly medial sandy loam------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-4	Cobbly medial sandy loam	---	---	0-45	15-30	60-95	55-90	35-65
	4-17	Cobbly medial sandy loam	---	---	10-60	15-45	55-95	50-90	30-65
	17-37	Gravelly sandy loam	SM	A-2-7	10-80	10-40	75-95	70-90	40-80
	37-41	Gravelly sandy loam	SM	A-2-7	10-80	10-40	75-95	70-90	40-80
	41-52	Gravelly material	SM	A-2-4	10-90	10-30	75-90	70-85	35-65
	52-80	Gravelly material	SM	A-2-4	10-90	10-30	75-90	70-85	35-65

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
726:									
Haploxerands, volcanic till, cobbly medial sandy loam------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-4	Cobbly medial sandy loam	---	---	0-45	15-30	60-95	55-90	35-65
	4-17	Cobbly medial sandy loam	---	---	10-60	15-45	55-95	50-90	30-65
	17-37	Gravelly sandy loam	SM	A-2-7	10-80	10-40	75-95	70-90	40-80
	37-41	Gravelly sandy loam	SM	A-2-7	10-80	10-40	75-95	70-90	40-80
	41-52	Gravelly material	SM	A-2-4	10-90	10-30	75-90	70-85	35-65
	52-80	Gravelly material	SM	A-2-4	10-90	10-30	75-90	70-85	35-65
727:									
Bonneyridge sandy loam---------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
728:									
Bonneyridge sandy loam---------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60
729:									
Bonneyridge sandy loam---------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
730:									
Tusccoll gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-6	Gravelly loam	MH	A-7-5	0	0-25	60-95	55-90	35-85
	6-14	Gravelly loam	GM	A-7-6	0-25	0-55	50-100	45-98	35-98
	14-23	Gravelly loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98
	23-33	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98
	33-41	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98
	41-49	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98
	49-70	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98
Schott very gravelly loam------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-5	0-10	0-15	55-95	50-90	30-85
	6-13	Very gravelly clay loam	ML	A-7-6	0-15	0-45	25-80	20-75	15-75
	13-22	Very cobbly clay loam	CL	A-7-6	0-15	0-45	25-80	20-75	15-75
	22-40	Extremely gravelly clay loam	GC	A-7-6	0-15	0-45	25-80	20-75	15-75
	40-50	Extremely gravelly sandy clay loam	GC	A-2-7	0-15	0-45	25-80	20-75	15-75
	50	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
731:									
Tusccoll gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-6	Gravelly loam	MH	A-7-5	0	0-25	60-95	55-90	35-85
	6-14	Gravelly loam	GM	A-7-6	0-25	0-55	50-100	45-98	35-98
	14-23	Gravelly loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98
	23-33	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98
	33-41	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98
	41-49	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98
	49-70	Gravelly clay loam	CL	A-7-6	0-25	0-55	50-100	45-98	35-98
Schott very gravelly loam------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-5	0-10	0-15	55-95	50-90	30-85
	6-13	Very gravelly clay loam	ML	A-7-6	0-15	0-45	25-80	20-75	15-75
	13-22	Very cobbly clay loam	CL	A-7-6	0-15	0-45	25-80	20-75	15-75
	22-40	Extremely gravelly clay loam	GC	A-7-6	0-15	0-45	25-80	20-75	15-75
	40-50	Extremely gravelly sandy clay loam	GC	A-2-7	0-15	0-45	25-80	20-75	15-75
	50	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
732:									
Bonepile taxadjunct, duripan substratum	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly medial sandy loam	---	---	0-40	0-40	45-80	40-75	25-65
	4-7	Very gravelly medial sandy loam	---	---	0-40	0-40	45-80	40-75	25-65
	7-15	Very gravelly medial sandy loam	---	---	0-40	0-40	45-80	40-75	25-70
	15-30	Extremely gravelly sandy loam	GM	A-2-6	0-40	10-50	45-80	40-75	25-70
	30-37	Extremely cobbly sandy clay loam	GC	A-2-6	0-40	10-50	45-80	40-75	25-70
	37-47	Extremely gravelly clay loam	GC	A-7-6	0-40	15-50	45-80	40-75	25-75
	47	Cemented material	---	---	---	---	---	---	---
733:									
Haploxeralfs, terrace, gravelly loam	0-5	Gravelly loam	GC	A-6	0-15	0-10	60-100	55-95	40-90
	5-11	Gravelly loam	CL	A-6	0-60	0-45	50-95	45-90	35-90
	11-18	Very gravelly loam	CL	A-6	0-60	0-45	50-95	45-90	35-90
	18-32	Very cobbly clay loam	CL	A-7-6	0-60	0-45	50-95	45-90	35-90
	32-48	Extremely cobbly clay loam	CL	A-6	0-60	0-45	50-95	45-90	35-90
	48-63	Extremely cobbly sandy clay loam	SC	A-6	0-60	0-45	50-95	45-90	35-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
734:									
Haploxerands medial sandy loam	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Medial sandy loam	---	---	0	0	65-95	60-90	35-65
	2-5	Gravelly medial sandy loam	---	---	0	0	65-95	60-90	35-65
	5-12	Medial sandy loam	---	---	0	0	55-100	50-96	25-72
	12-23	Gravelly medial sandy loam	---	---	0	0	55-100	50-96	25-72
	23-30	Gravelly coarse sandy loam	SM	A-2-4	0	0	55-100	50-96	25-72
	30-42	Gravelly coarse sandy loam	SM	A-2-4	0	0	55-100	50-96	25-72
	42-60	Gravelly coarse sandy loam	SM	A-2-4	0	0	55-100	50-96	25-72
	60-80	Coarse sandy loam	SM	A-2-4	0	0	55-100	50-96	25-72
Aquic Xerofluvents peaty very fine sandy loam----------	0-3	Peaty very fine sandy loam	OL	A-5	0	0	95-100	90-100	65-95
	3-7	Mucky fine sandy loam	OL	A-4	0	0	95-100	90-100	65-95
	7-16	Gravelly coarse sandy loam	GM	A-1-b	0	0	45-80	40-75	20-55
	16-19	Mucky fine sandy loam	OL	A-4	0	0	95-100	90-100	65-95
	19-23	Gravelly sandy loam	SM	A-2-4	0	0	45-80	40-75	20-55
	23-35	Mucky very fine sandy loam	OL	A-4	0	0	95-100	90-100	65-95
	35-49	Gravelly loamy coarse sand	GM	A-1-b	0	0	45-80	40-75	20-55
	49-63	Peaty fine sandy loam	OL	A-4	0	0	95-100	90-100	65-95
	63-71	Gravelly loamy coarse sand	SM	A-2-4	0	0	45-80	40-75	20-55
	71-80	Mucky fine sandy loam	OL	A-4	0	0	95-100	90-100	65-95

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
735:									
Fluvaquents, loamy----------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Loam	CL	A-6	0	0	80-100	75-100	55-95
	2-9	Loam	CL	A-6	0	0	80-100	75-100	55-95
	9-18	Sandy clay loam	CL	A-6	0	0	80-100	75-100	40-10
	18-24	Silt loam	CL	A-6	0	0	80-100	75-100	40-10
	24-27	Sandy loam	SC-SM	A-4	0	0	80-100	75-100	40-10
	27-37	Silt loam	CL	A-4	0	0	80-100	75-100	40-10
	37-45	Loam	CL	A-6	0	0	80-100	75-100	40-95
	45-65	Sandy clay loam	CL	A-6	0	0	80-100	75-100	40-95
	65-70	Sandy loam, sandy clay loam	SC	A-4	0	0	80-100	75-100	40-95
	70-85	Sandy clay loam	CL	A-6	0	0	55-100	50-100	30-95
801:									
Obstruction gravelly sandy loam	0-4	Slightly decomposed plant material	PT	---	---	---	---	---	---
	4-7	Gravelly sandy loam	SM	A-2-6	0-10	0-15	50-80	45-75	25-70
	7-10	Gravelly sandy clay loam	GC	A-2-6	0	0-25	60-95	55-90	35-85
	10-18	Gravelly fine sandy loam	SC	A-6	0	0-25	60-95	55-90	35-85
	18-25	Gravelly sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85
	25-33	Sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85
	33-44	Fine sandy loam	CL	A-6	0	0	50-100	45-96	25-91
	44-64	Gravelly fine sandy loam	SC-SM	A-4	0	0	50-100	45-96	25-91
	64-84	Gravelly fine sandy loam	SM	A-4	0	0	50-100	45-96	25-91
	84	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
802:									
Obskel very gravelly sandy loam	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---
	1-4	Very gravelly sandy loam	GM	A-2-4	0-10	0-15	50-80	45-75	25-50
	4-9	Very gravelly sandy loam	GM	A-2-4	0-15	0-30	45-90	40-85	25-80
	9-19	Very gravelly sandy loam	GC	A-2-6	0-15	0-30	45-90	40-85	25-80
	19-30	Very gravelly loam	GC	A-6	0-15	0-30	45-90	40-85	25-80
	30-56	Very gravelly loam	GC	A-6	0-15	0-30	45-90	40-85	25-80
	56	Bedrock	---	---	---	---	---	---	---
Obstruction gravelly sandy loam	0-4	Slightly decomposed plant material	PT	---	---	---	---	---	---
	4-7	Gravelly sandy loam	SM	A-2-6	0-10	0-15	50-80	45-75	25-70
	7-10	Gravelly sandy clay loam	GC	A-2-6	0	0-25	60-95	55-90	35-85
	10-18	Gravelly fine sandy loam	SC	A-6	0	0-25	60-95	55-90	35-85
	18-25	Gravelly sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85
	25-33	Sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85
	33-44	Fine sandy loam	CL	A-6	0	0	50-100	45-96	25-91
	44-64	Gravelly fine sandy loam	SC-SM	A-4	0	0	50-100	45-96	25-91
	64-84	Gravelly fine sandy loam	SM	A-4	0	0	50-100	45-96	25-91
	84	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
803:									
Obskel very gravelly sandy loam	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---
	1-4	Very gravelly sandy loam	GM	A-2-4	0-10	0-15	50-80	45-75	25-50
	4-9	Very gravelly sandy loam	GM	A-2-4	0-15	0-30	45-90	40-85	25-80
	9-19	Very gravelly sandy loam	GC	A-2-6	0-15	0-30	45-90	40-85	25-80
	19-30	Very gravelly loam	GC	A-6	0-15	0-30	45-90	40-85	25-80
	30-56	Very gravelly loam	GC	A-6	0-15	0-30	45-90	40-85	25-80
	56	Bedrock	---	---	---	---	---	---	---
Obstruction gravelly sandy loam	0-4	Slightly decomposed plant material	PT	---	---	---	---	---	---
	4-7	Gravelly sandy loam	SM	A-2-6	0-10	0-15	50-80	45-75	25-70
	7-10	Gravelly sandy clay loam	GC	A-2-6	0	0-25	60-95	55-90	35-85
	10-18	Gravelly fine sandy loam	SC	A-6	0	0-25	60-95	55-90	35-85
	18-25	Gravelly sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85
	25-33	Sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85
	33-44	Fine sandy loam	CL	A-6	0	0	50-100	45-96	25-91
	44-64	Gravelly fine sandy loam	SC-SM	A-4	0	0	50-100	45-96	25-91
	64-84	Gravelly fine sandy loam	SM	A-4	0	0	50-100	45-96	25-91
	84	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
804:									
Obskel very gravelly sandy loam	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---
	1-4	Very gravelly sandy loam	GM	A-2-4	0-10	0-15	50-80	45-75	25-50
	4-9	Very gravelly sandy loam	GM	A-2-4	0-15	0-30	45-90	40-85	25-80
	9-19	Very gravelly sandy loam	GC	A-2-6	0-15	0-30	45-90	40-85	25-80
	19-30	Very gravelly loam	GC	A-6	0-15	0-30	45-90	40-85	25-80
	30-56	Very gravelly loam	GC	A-6	0-15	0-30	45-90	40-85	25-80
	56	Bedrock	---	---	---	---	---	---	---
Obstruction gravelly sandy loam	0-4	Slightly decomposed plant material	PT	---	---	---	---	---	---
	4-7	Gravelly sandy loam	SM	A-2-6	0-10	0-15	50-80	45-75	25-70
	7-10	Gravelly sandy clay loam	GC	A-2-6	0	0-25	60-95	55-90	35-85
	10-18	Gravelly fine sandy loam	SC	A-6	0	0-25	60-95	55-90	35-85
	18-25	Gravelly sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85
	25-33	Sandy clay loam	CL	A-6	0	0-25	60-95	55-90	35-85
	33-44	Fine sandy loam	CL	A-6	0	0	50-100	45-96	25-91
	44-64	Gravelly fine sandy loam	SC-SM	A-4	0	0	50-100	45-96	25-91
	64-84	Gravelly fine sandy loam	SM	A-4	0	0	50-100	45-96	25-91
	84	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
804:									
Retsongulch very gravelly sandy loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly sandy loam	GM	A-2-6	0-15	0-15	50-95	45-90	25-85
	3-12	Very gravelly sandy clay loam	GC	A-2-6	0-40	10-50	40-65	35-60	20-55
	12-21	Extremely gravelly sandy clay loam	GC	A-2-6	0-40	10-50	40-65	35-60	20-55
	21-30	Extremely gravelly sandy loam	GC-GM	A-2-4	0-40	10-50	40-65	35-60	20-55
	30	Bedrock	---	---	---	---	---	---	---
805:									
Bottlehill very gravelly loam--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Very gravelly loam	GM	A-7-5	0-10	0-10	30-55	25-50	15-50
	4-9	Very gravelly loam	GM	A-2-7	0-10	0-10	30-55	25-50	15-50
	9-13	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50
	13-22	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50
	22-33	Extremely gravelly clay loam	GC	A-2-7	0-45	0-45	20-35	15-30	10-30
	33	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
805:									
Walkermine very gravelly loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-2-7	0-55	0-30	30-75	25-70	15-65
	3-12	Very gravelly loam	GM	A-2-7	0-55	0-55	20-65	20-60	15-55
	12	Bedrock	---	---	---	---	---	---	---
Logtrain gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0-10	0-15	30-65	25-60	15-55
	3-9	Very gravelly loam	GM	A-7-6	0-55	0-55	15-80	10-75	5-70
	9-21	Very gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70
	21-38	Very cobbly loam	CL	A-6	0-55	0-55	15-80	10-75	5-70
	38-54	Extremely gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70
	54	Bedrock	---	---	---	---	---	---	---
806:									
Bottlehill very gravelly loam--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Very gravelly loam	GM	A-7-5	0-10	0-10	30-55	25-50	15-50
	4-9	Very gravelly loam	GM	A-2-7	0-10	0-10	30-55	25-50	15-50
	9-13	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50
	13-22	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50
	22-33	Extremely gravelly clay loam	GC	A-2-7	0-45	0-45	20-35	15-30	10-30
	33	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
806:									
Walkermine very gravelly loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-2-7	0-55	0-30	30-75	25-70	15-65
	3-12	Very gravelly loam	GM	A-2-7	0-55	0-55	20-65	20-60	15-55
	12	Bedrock	---	---	---	---	---	---	---
Logtrain gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0-10	0-15	30-65	25-60	15-55
	3-9	Very gravelly loam	GM	A-7-6	0-55	0-55	15-80	10-75	5-70
	9-21	Very gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70
	21-38	Very cobbly loam	CL	A-6	0-55	0-55	15-80	10-75	5-70
	38-54	Extremely gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70
	54	Bedrock	---	---	---	---	---	---	---
807:									
Bottlehill very gravelly loam--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Very gravelly loam	GM	A-7-5	0-10	0-10	30-55	25-50	15-50
	4-9	Very gravelly loam	GM	A-2-7	0-10	0-10	30-55	25-50	15-50
	9-13	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50
	13-22	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50
	22-33	Extremely gravelly clay loam	GC	A-2-7	0-45	0-45	20-35	15-30	10-30
	33	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
807:									
Logtrain gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0-10	0-15	30-65	25-60	15-55
	3-9	Very gravelly loam	GM	A-7-6	0-55	0-55	15-80	10-75	5-70
	9-21	Very gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70
	21-38	Very cobbly loam	CL	A-6	0-55	0-55	15-80	10-75	5-70
	38-54	Extremely gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70
	54	Bedrock	---	---	---	---	---	---	---
Walkermine very gravelly loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-2-7	0-55	0-30	30-75	25-70	15-65
	3-12	Very gravelly loam	GM	A-2-7	0-55	0-55	20-65	20-60	15-55
	12	Bedrock	---	---	---	---	---	---	---
808:									
Bottlehill very gravelly loam--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Very gravelly loam	GM	A-7-5	0-10	0-10	30-55	25-50	15-50
	4-9	Very gravelly loam	GM	A-2-7	0-10	0-10	30-55	25-50	15-50
	9-13	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50
	13-22	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50
	22-33	Extremely gravelly clay loam	GC	A-2-7	0-45	0-45	20-35	15-30	10-30
	33	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
808:									
Walkermine very gravelly loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-2-7	0-55	0-30	30-75	25-70	15-65
	3-12	Very gravelly loam	GM	A-2-7	0-55	0-55	20-65	20-60	15-55
	12	Bedrock	---	---	---	---	---	---	---
Logtrain gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0-10	0-15	30-65	25-60	15-55
	3-9	Very gravelly loam	GM	A-7-6	0-55	0-55	15-80	10-75	5-70
	9-21	Very gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70
	21-38	Very cobbly loam	CL	A-6	0-55	0-55	15-80	10-75	5-70
	38-54	Extremely gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70
	54	Bedrock	---	---	---	---	---	---	---
809:									
Walkermine very gravelly loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-2-7	0-55	0-30	30-75	25-70	15-65
	3-12	Very gravelly loam	GM	A-2-7	0-55	0-55	20-65	20-60	15-55
	12	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
809:									
Bottlehill very gravelly loam--	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Very gravelly loam	GM	A-7-5	0-10	0-10	30-55	25-50	15-50
	4-9	Very gravelly loam	GM	A-2-7	0-10	0-10	30-55	25-50	15-50
	9-13	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50
	13-22	Very gravelly loam	GC	A-2-6	0-10	0-25	25-55	20-50	10-50
	22-33	Extremely gravelly clay loam	GC	A-2-7	0-45	0-45	20-35	15-30	10-30
	33	Bedrock	---	---	---	---	---	---	---
Logtrain gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0-10	0-15	30-65	25-60	15-55
	3-9	Very gravelly loam	GM	A-7-6	0-55	0-55	15-80	10-75	5-70
	9-21	Very gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70
	21-38	Very cobbly loam	CL	A-6	0-55	0-55	15-80	10-75	5-70
	38-54	Extremely gravelly loam	GC	A-6	0-55	0-55	15-80	10-75	5-70
	54	Bedrock	---	---	---	---	---	---	---
Rock outcrop, metavolcanic.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
810:									
Dixmine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-6	0	0-10	40-80	35-75	30-70
	6-11	Very gravelly loam	GM	A-7-6	0	0-30	55-80	50-75	40-75
	11-17	Gravelly loam	CL	A-6	0	0-30	55-80	50-75	40-75
	17-30	Very cobbly clay loam	CL	A-7-6	0	0-50	30-80	25-75	20-75
	30-41	Very gravelly clay loam	GC	A-7-6	0	0-50	30-80	25-75	20-75
	41-54	Extremely cobbly clay loam	GC	A-6	0	0-50	30-80	25-75	20-75
	54	Bedrock	---	---	---	---	---	---	---
Mac gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	MH	A-7-6	0	0-15	45-80	40-75	25-70
	4-9	Very gravelly loam	GM	A-7-6	0	0-25	45-90	40-85	25-85
	9-15	Gravelly silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85
	15-23	Silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85
	23-37	Extremely gravelly silt loam	GC	A-2-7	0	0-55	15-60	10-55	5-55
	37	Bedrock	---	---	---	---	---	---	---
Spine very gravelly loam-------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-7-6	0	0-10	30-65	25-60	15-55
	3-9	Extremely gravelly loam	GC	A-2-6	0	0-25	25-60	20-55	15-55
	9-16	Extremely gravelly clay loam	GC	A-2-6	0	0-25	25-60	20-55	15-55
	16	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
811:									
Powellton gravelly loam--------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly loam	GM	A-7-5	0	0	45-95	40-90	25-85
	4-9	Gravelly loam	ML	A-7-5	0	0-10	75-100	70-96	60-96
	9-15	Loam	CL	A-7-6	0	0-10	75-100	70-96	60-96
	15-24	Clay loam	CL	A-7-6	0	0-10	75-100	70-96	60-96
	24-30	Clay loam	CL	A-6	0	0-10	75-100	70-96	60-96
	30-41	Silt loam	CL	A-6	0	0	65-100	60-100	50-10
	41-61	Loam	CL	A-6	0	0	65-100	60-100	50-10
	61-83	Loam	CL	A-4, A-6	0	0	65-100	60-100	50-10
Toadtown loam-------------------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-5	Loam	OH	A-7-5	0	0	45-95	40-90	35-85
	5-8	Loam	MH	A-7-5	0	0-15	75-95	70-90	60-90
	8-13	Clay loam	ML	A-7-6	0	0-15	75-95	70-90	60-90
	13-18	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-10
	18-27	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-10
	27-51	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-10
	51-65	Loam	CL	A-6	0	0	80-100	75-100	60-10
	65-75	Loam	CL	A-6	0	0	80-100	75-100	60-10
	75-79	Loam	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
812:									
Powellton gravelly loam--------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly loam	GM	A-7-5	0	0	45-95	40-90	25-85
	4-9	Gravelly loam	ML	A-7-5	0	0-10	75-100	70-96	60-96
	9-15	Loam	CL	A-7-6	0	0-10	75-100	70-96	60-96
	15-24	Clay loam	CL	A-7-6	0	0-10	75-100	70-96	60-96
	24-30	Clay loam	CL	A-6	0	0-10	75-100	70-96	60-96
	30-41	Silt loam	CL	A-6	0	0	65-100	60-100	50-10
	41-61	Loam	CL	A-6	0	0	65-100	60-100	50-10
	61-83	Loam	CL	A-4, A-6	0	0	65-100	60-100	50-10
Toadtown loam------------------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-5	Loam	OH	A-7-5	0	0	45-95	40-90	35-85
	5-8	Loam	MH	A-7-5	0	0-15	75-95	70-90	60-90
	8-13	Clay loam	ML	A-7-6	0	0-15	75-95	70-90	60-90
	13-18	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-10
	18-27	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-10
	27-51	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-10
	51-65	Loam	CL	A-6	0	0	80-100	75-100	60-10
	65-75	Loam	CL	A-6	0	0	80-100	75-100	60-10
	75-79	Loam	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passi sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
813:									
Powellton gravelly loam--------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly loam	GM	A-7-5	0	0	45-95	40-90	25-85
	4-9	Gravelly loam	ML	A-7-5	0	0-10	75-100	70-96	60-96
	9-15	Loam	CL	A-7-6	0	0-10	75-100	70-96	60-96
	15-24	Clay loam	CL	A-7-6	0	0-10	75-100	70-96	60-96
	24-30	Clay loam	CL	A-6	0	0-10	75-100	70-96	60-96
	30-41	Silt loam	CL	A-6	0	0	65-100	60-100	50-100
	41-61	Loam	CL	A-6	0	0	65-100	60-100	50-100
	61-83	Loam	CL	A-4, A-6	0	0	65-100	60-100	50-100
Toadtown loam------------------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-5	Loam	OH	A-7-5	0	0	45-95	40-90	35-85
	5-8	Loam	MH	A-7-5	0	0-15	75-95	70-90	60-90
	8-13	Clay loam	ML	A-7-6	0	0-15	75-95	70-90	60-90
	13-18	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100
	18-27	Clay	CH	A-7-6	0	0-15	60-100	55-100	50-100
	27-51	Clay loam	CL	A-7-6	0	0	80-100	75-100	60-100
	51-65	Loam	CL	A-6	0	0	80-100	75-100	60-100
	65-75	Loam	CL	A-6	0	0	80-100	75-100	60-100
	75-79	Loam	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
814:									
Mountyana gravelly loam--------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly loam	GM	A-7-5	0	0-10	60-100	55-96	35-91
	4-9	Gravelly loam	ML	A-7-6	0	0-4	75-100	70-96	60-96
	9-13	Gravelly clay loam	CL	A-7-6	0	0-4	75-100	70-96	60-96
	13-19	Gravelly clay loam	CL	A-7-6	0	0-4	75-100	70-96	60-96
	19-26	Gravelly clay loam	CL	A-7-6	0	0-10	65-100	60-96	35-96
	26-37	Gravelly clay loam	GC	A-7-6	0	0-10	65-100	60-96	35-96
	37-52	Extremely gravelly clay loam	GC	A-6	0-30	30-65	40-75	35-70	30-70
	52-65	Extremely gravelly loam		A-6	0-30	30-65	40-75	35-70	30-65
	65	Bedrock	---	---	---	---	---	---	---
815:									
Mountyana gravelly loam--------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly loam	GM	A-7-5	0	0-10	60-100	55-96	35-91
	4-9	Gravelly loam	ML	A-7-6	0	0-4	75-100	70-96	60-96
	9-13	Gravelly clay loam	CL	A-7-6	0	0-4	75-100	70-96	60-96
	13-19	Gravelly clay loam	CL	A-7-6	0	0-4	75-100	70-96	60-96
	19-26	Gravelly clay loam	CL	A-7-6	0	0-10	65-100	60-96	35-96
	26-37	Gravelly clay loam	GC	A-7-6	0	0-10	65-100	60-96	35-96
	37-52	Extremely gravelly clay loam	GC	A-6	0-30	30-65	40-75	35-70	30-70
	52-65	Extremely gravelly loam		A-6	0-30	30-65	40-75	35-70	30-65
	65	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
817:									
Lydon very gravelly medial coarse sandy loam----------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	0-30	50-75	45-70	25-50
	3-6	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	10-30	40-90	35-85	20-60
	6-13	Extremely gravelly sandy loam	GM	A-1-a	0-25	10-30	40-90	35-85	20-60
	13-21	Extremely gravelly sandy loam	GM	A-2-4	0-25	25-80	30-75	25-70	15-60
	21-35	Extremely cobbly fine sandy loam	SC	A-4	0-25	25-80	30-75	25-70	15-60
	35	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
818:									
Lydon very gravelly medial coarse sandy loam----------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	0-30	50-75	45-70	25-50
	3-6	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	10-30	40-90	35-85	20-60
	6-13	Extremely gravelly sandy loam	GM	A-1-a	0-25	10-30	40-90	35-85	20-60
	13-21	Extremely gravelly sandy loam	GM	A-2-4	0-25	25-80	30-75	25-70	15-60
	21-35	Extremely cobbly fine sandy loam	SC	A-4	0-25	25-80	30-75	25-70	15-60
	35	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
819:									
Lydon very gravelly medial coarse sandy loam----------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	0-30	50-75	45-70	25-50
	3-6	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	10-30	40-90	35-85	20-60
	6-13	Extremely gravelly sandy loam	GM	A-1-a	0-25	10-30	40-90	35-85	20-60
	13-21	Extremely gravelly sandy loam	GM	A-2-4	0-25	25-80	30-75	25-70	15-60
	21-35	Extremely cobbly fine sandy loam	SC	A-4	0-25	25-80	30-75	25-70	15-60
	35	Bedrock	---	---	---	---	---	---	---
Rock outcrop, mudflow breccia.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
820:									
Lydon very gravelly medial coarse sandy loam----------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	0-30	50-75	45-70	25-50
	3-6	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	10-30	40-90	35-85	20-60
	6-13	Extremely gravelly sandy loam	GM	A-1-a	0-25	10-30	40-90	35-85	20-60
	13-21	Extremely gravelly sandy loam	GM	A-2-4	0-25	25-80	30-75	25-70	15-60
	21-35	Extremely cobbly fine sandy loam	SC	A-4	0-25	25-80	30-75	25-70	15-60
	35	Bedrock	---	---	---	---	---	---	---
Rock outcrop, mudflow breccia.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
821:									
Lydon very gravelly medial coarse sandy loam----------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	0-30	50-75	45-70	25-50
	3-6	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	10-30	40-90	35-85	20-60
	6-13	Extremely gravelly sandy loam	GM	A-1-a	0-25	10-30	40-90	35-85	20-60
	13-21	Extremely gravelly sandy loam	GM	A-2-4	0-25	25-80	30-75	25-70	15-60
	21-35	Extremely cobbly fine sandy loam	SC	A-4	0-25	25-80	30-75	25-70	15-60
	35	Bedrock	---	---	---	---	---	---	---
Rock outcrop, mudflow breccia.									
822:									
Bonepile gravelly medial loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly medial loam	---	---	0-15	0-25	55-80	50-75	30-70
	3-9	Cobbly medial loam	---	---	0-15	0-25	55-80	50-75	30-70
	9-18	Gravelly medial loam	---	---	0-15	0-15	55-80	50-75	30-70
	18-30	Very gravelly medial loam	---	---	0-15	0-45	40-75	35-70	20-65
	30-44	Very gravelly medial loam	GC	A-6	0-30	0-45	25-80	20-75	15-70
	44	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
823:									
Bonepile gravelly medial loam--	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly medial loam	---	---	0-15	0-25	55-80	50-75	30-70
	3-9	Cobbly medial loam	---	---	0-15	0-25	55-80	50-75	30-70
	9-18	Gravelly medial loam	---	---	0-15	0-15	55-80	50-75	30-70
	18-30	Very gravelly medial loam	---	---	0-15	0-45	40-75	35-70	20-65
	30-44	Very gravelly medial loam	GC	A-6	0-30	0-45	25-80	20-75	15-70
	44	Bedrock	---	---	---	---	---	---	---
824:									
Beecee very gravelly medial loam----------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---
	1-4	Very gravelly medial loam	---	---	0-10	0-25	50-65	45-60	25-55
	4-8	Very gravelly medial loam	---	---	0-30	0-30	25-75	20-70	15-65
	8-15	Very gravelly medial loam	---	---	0-30	0-30	25-75	20-70	15-65
	15-22	Extremely gravelly medial loam	---	---	0-30	0-30	25-75	20-70	15-65
	22-31	Extremely gravelly loam	GC	A-2-6	0-30	0-45	20-75	15-70	10-65
	31-44	Very gravelly loam	GC	A-2-6	0-30	0-45	20-75	15-70	10-65
	44-59	Very gravelly loam	GC	A-2-6	0-45	0-45	30-75	25-70	15-65
	59-68	Very gravelly loam	GC	A-6	0-45	0-45	30-75	25-70	15-65
	68-86	Very stony loam	CL	A-6	0-45	0-45	30-75	25-70	15-65

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
825:									
Beecee very gravelly medial loam----------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---
	1-4	Very gravelly medial loam	---	---	0-10	0-25	50-65	45-60	25-55
	4-8	Very gravelly medial loam	---	---	0-30	0-30	25-75	20-70	15-65
	8-15	Very gravelly medial loam	---	---	0-30	0-30	25-75	20-70	15-65
	15-22	Extremely gravelly medial loam	---	---	0-30	0-30	25-75	20-70	15-65
	22-31	Extremely gravelly loam	GC	A-2-6	0-30	0-45	20-75	15-70	10-65
	31-44	Very gravelly loam	GC	A-2-6	0-30	0-45	20-75	15-70	10-65
	44-59	Very gravelly loam	GC	A-2-6	0-45	0-45	30-75	25-70	15-65
	59-68	Very gravelly loam	GC	A-6	0-45	0-45	30-75	25-70	15-65
	68-86	Very stony loam	CL	A-6	0-45	0-45	30-75	25-70	15-65

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
825:									
Lydon very gravelly medial coarse sandy loam----------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-1	Moderately decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	0-30	50-75	45-70	25-50
	3-6	Very gravelly medial coarse sandy loam	GM	A-1-b	0-25	10-30	40-90	35-85	20-60
	6-13	Extremely gravelly sandy loam	GM	A-1-a	0-25	10-30	40-90	35-85	20-60
	13-21	Extremely gravelly sandy loam	GM	A-2-4	0-25	25-80	30-75	25-70	15-60
	21-35	Extremely cobbly fine sandy loam	SC	A-4	0-25	25-80	30-75	25-70	15-60
	35	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
826:									
Redbone gravelly medial sandy loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly medial sandy loam	---	---	0-10	0-10	60-80	55-75	35-65
	4-7	Gravelly medial sandy loam	---	---	0-10	0-10	55-80	50-75	30-70
	7-17	Gravelly medial fine sandy loam	---	---	0-10	0-10	55-80	50-75	30-70
	17-28	Very gravelly fine sandy loam	GC	A-2-6	0-15	0-15	20-55	15-50	10-45
	28-41	Very gravelly coarse sandy loam	GC	A-2-6	0-15	0-15	20-55	15-50	10-45
	41-54	Very gravelly coarse sandy loam	GC	A-2-4	0-15	0-15	20-55	15-50	10-45
	54	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
827:									
Redbone gravelly medial sandy loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly medial sandy loam	---	---	0-10	0-10	60-80	55-75	35-65
	4-7	Gravelly medial sandy loam	---	---	0-10	0-10	55-80	50-75	30-70
	7-17	Gravelly medial fine sandy loam	---	---	0-10	0-10	55-80	50-75	30-70
	17-28	Very gravelly fine sandy loam	GC	A-2-6	0-15	0-15	20-55	15-50	10-45
	28-41	Very gravelly coarse sandy loam	GC	A-2-6	0-15	0-15	20-55	15-50	10-45
	41-54	Very gravelly coarse sandy loam	GC	A-2-4	0-15	0-15	20-55	15-50	10-45
	54	Bedrock	---	---	---	---	---	---	---
829:									
Paradiso loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-4	Loam	CH	A-7-5	0	0	80-100	75-100	60-95
	4-9	Clay loam	MH	A-7-5	0	0	95-100	90-100	85-10
	9-16	Clay loam	CH	A-7-6	0	0	95-100	90-100	75-10
	16-25	Clay loam	CH	A-7-6	0	0	95-100	90-100	75-10
	25-45	Clay	CH	A-7-6	0	0	95-100	90-100	75-10
	45-58	Clay loam	CL	A-7-6	0	0-15	65-100	60-100	50-10
	58-74	Clay loam	CL	A-6	0	0-15	65-100	60-100	50-10
	74-84	Loam	CL	A-6	0	0-25	55-100	50-100	40-95

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
830:									
Paradiso loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-4	Loam	CH	A-7-5	0	0	80-100	75-100	60-95
	4-9	Clay loam	MH	A-7-5	0	0	95-100	90-100	85-10
	9-16	Clay loam	CH	A-7-6	0	0	95-100	90-100	75-10
	16-25	Clay loam	CH	A-7-6	0	0	95-100	90-100	75-10
	25-45	Clay	CH	A-7-6	0	0	95-100	90-100	75-10
	45-58	Clay loam	CL	A-7-6	0	0-15	65-100	60-100	50-10
	58-74	Clay loam	CL	A-6	0	0-15	65-100	60-100	50-10
	74-84	Loam	CL	A-6	0	0-25	55-100	50-100	40-95
831:									
Surnuf gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-10
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-10
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
Bigridge loam----------	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	51-62	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
831:									
Spine very gravelly loam-------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-7-6	0	0-10	30-65	25-60	15-55
	3-9	Extremely gravelly loam	GC	A-2-6	0	0-25	25-60	20-55	15-55
	9-16	Extremely gravelly clay loam	GC	A-2-6	0	0-25	25-60	20-55	15-55
	16	Bedrock	---	---	---	---	---	---	---
832:									
Surnuf gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-10
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-10
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
Bigridge loam------------------	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	51-62	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
832:									
Spine very gravelly loam-------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-7-6	0	0-10	30-65	25-60	15-55
	3-9	Extremely gravelly loam	GC	A-2-6	0	0-25	25-60	20-55	15-55
	9-16	Extremely gravelly clay loam	GC	A-2-6	0	0-25	25-60	20-55	15-55
	16	Bedrock	---	---	---	---	---	---	---
833:									
Surnuf gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	GM	A-7-5	0	0-10	60-95	55-90	40-90
	4-9	Gravelly clay loam	MH	A-7-5	0	0-15	65-100	60-100	55-10
	9-16	Gravelly clay loam	CH	A-7-6	0	0-15	65-100	60-100	55-10
	16-27	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	27-29	Gravelly clay	CH	A-7-6	0-10	0-40	60-100	55-100	50-10
	29-56	Gravelly silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
	56-72	Silty clay	CH	A-7-6	0-40	0-45	40-90	35-85	30-85
Bigridge loam------------------	0-1	Moderately decomposed plant material	PT	---	0	0	---	---	---
	1-5	Loam	ML	A-4	0	0	65-95	60-90	50-85
	5-9	Gravelly loam	GC	A-6	0	0	65-90	60-85	50-80
	9-15	Gravelly loam	CL	A-6	0	0-15	65-95	60-90	50-85
	15-20	Gravelly loam	GC	A-6	0	0-15	65-95	60-90	50-85
	20-27	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	27-36	Extremely gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	36-51	Very gravelly loam	GC	A-2-6	0	0	10-50	5-45	0-40
	51-62	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
833:									
Spine very gravelly loam-------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-7-6	0	0-10	30-65	25-60	15-55
	3-9	Extremely gravelly loam	GC	A-2-6	0	0-25	25-60	20-55	15-55
	9-16	Extremely gravelly clay loam	GC	A-2-6	0	0-25	25-60	20-55	15-55
	16	Bedrock	---	---	---	---	---	---	---
834:									
Hietanen gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0	0	50-95	45-90	40-90
	3-8	Gravelly loam	ML	A-7-6	0	0-15	60-100	55-95	40-95
	8-19	Silt loam	CL	A-7-6	0	0-15	60-100	55-95	40-95
	19-30	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95
	30-53	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95
	53	Bedrock	---	---	---	---	---	---	---
Mac gravelly loam--------------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	MH	A-7-6	0	0-15	45-80	40-75	25-70
	4-9	Very gravelly loam	GM	A-7-6	0	0-25	45-90	40-85	25-85
	9-15	Gravelly silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85
	15-23	Silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85
	23-37	Extremely gravelly silt loam	GC	A-2-7	0	0-55	15-60	10-55	5-55
	37	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
835:									
Hietanen gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0	0	50-95	45-90	40-90
	3-8	Gravelly loam	ML	A-7-6	0	0-15	60-100	55-95	40-95
	8-19	Silt loam	CL	A-7-6	0	0-15	60-100	55-95	40-95
	19-30	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95
	30-53	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95
	53	Bedrock	---	---	---	---	---	---	---
Mac gravelly loam--------------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	MH	A-7-6	0	0-15	45-80	40-75	25-70
	4-9	Very gravelly loam	GM	A-7-6	0	0-25	45-90	40-85	25-85
	9-15	Gravelly silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85
	15-23	Silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85
	23-37	Extremely gravelly silt loam	GC	A-2-7	0	0-55	15-60	10-55	5-55
	37	Bedrock	---	---	---	---	---	---	---
836:									
Hietanen gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0	0	50-95	45-90	40-90
	3-8	Gravelly loam	ML	A-7-6	0	0-15	60-100	55-95	40-95
	8-19	Silt loam	CL	A-7-6	0	0-15	60-100	55-95	40-95
	19-30	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95
	30-53	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95
	53	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
836:									
Mac gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	MH	A-7-6	0	0-15	45-80	40-75	25-70
	4-9	Very gravelly loam	GM	A-7-6	0	0-25	45-90	40-85	25-85
	9-15	Gravelly silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85
	15-23	Silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85
	23-37	Extremely gravelly silt loam	GC	A-2-7	0	0-55	15-60	10-55	5-55
	37	Bedrock	---	---	---	---	---	---	---
Spine very gravelly loam-------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-7-6	0	0-10	30-65	25-60	15-55
	3-9	Extremely gravelly loam	GC	A-2-6	0	0-25	25-60	20-55	15-55
	9-16	Extremely gravelly clay loam	GC	A-2-6	0	0-25	25-60	20-55	15-55
	16	Bedrock	---	---	---	---	---	---	---
837:									
Hietanen gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly loam	GM	A-7-5	0	0	50-95	45-90	40-90
	3-8	Gravelly loam	ML	A-7-6	0	0-15	60-100	55-95	40-95
	8-19	Silt loam	CL	A-7-6	0	0-15	60-100	55-95	40-95
	19-30	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95
	30-53	Silt loam	CL	A-6	0	0-15	60-100	55-95	40-95
	53	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
837:									
Spine very gravelly loam-------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-7-6	0	0-10	30-65	25-60	15-55
	3-9	Extremely gravelly loam	GC	A-2-6	0	0-25	25-60	20-55	15-55
	9-16	Extremely gravelly clay loam	GC	A-2-6	0	0-25	25-60	20-55	15-55
	16	Bedrock	---	---	---	---	---	---	---
Mac gravelly loam--------------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	MH	A-7-6	0	0-15	45-80	40-75	25-70
	4-9	Very gravelly loam	GM	A-7-6	0	0-25	45-90	40-85	25-85
	9-15	Gravelly silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85
	15-23	Silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85
	23-37	Extremely gravelly silt loam	GC	A-2-7	0	0-55	15-60	10-55	5-55
	37	Bedrock	---	---	---	---	---	---	---
838:									
Dixmine very gravelly loam-----	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-6	Very gravelly loam	GM	A-7-6	0	0-10	40-80	35-75	30-70
	6-11	Very gravelly loam	GM	A-7-6	0	0-30	55-80	50-75	40-75
	11-17	Gravelly loam	CL	A-6	0	0-30	55-80	50-75	40-75
	17-30	Very cobbly clay loam	CL	A-7-6	0	0-50	30-80	25-75	20-75
	30-41	Very gravelly clay loam	GC	A-7-6	0	0-50	30-80	25-75	20-75
	41-54	Extremely cobbly clay loam	GC	A-6	0	0-50	30-80	25-75	20-75
	54	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
838:									
Spine very gravelly loam-------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Very gravelly loam	GM	A-7-6	0	0-10	30-65	25-60	15-55
	3-9	Extremely gravelly loam	GC	A-2-6	0	0-25	25-60	20-55	15-55
	9-16	Extremely gravelly clay loam	GC	A-2-6	0	0-25	25-60	20-55	15-55
	16	Bedrock	---	---	---	---	---	---	---
Mac gravelly loam--------------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-4	Gravelly loam	MH	A-7-6	0	0-15	45-80	40-75	25-70
	4-9	Very gravelly loam	GM	A-7-6	0	0-25	45-90	40-85	25-85
	9-15	Gravelly silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85
	15-23	Silty clay loam	CL	A-7-6	0	0-25	45-90	40-85	25-85
	23-37	Extremely gravelly silt loam	GC	A-2-7	0	0-55	15-60	10-55	5-55
	37	Bedrock	---	---	---	---	---	---	---
839:									
Chawanakee gravelly sandy loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	---	---	---	---	---	---
	2-5	Gravelly sandy loam	SM	A-2-4	0	0	60-90	55-85	30-60
	5-11	Gravelly sandy loam	SM	A-2-4	0	0	55-90	50-85	25-60
	11-19	Gravelly sandy loam	GM	A-1-b	0	0	55-90	50-85	25-60
	19	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
839:									
Billscabin gravelly sandy loam	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-5	Gravelly sandy loam	SM	A-1-b	0-65	0-30	50-95	45-90	25-65
	5-14	Very gravelly sandy loam	GC-GM	A-1-b	0-65	0-30	50-95	45-90	25-65
	14-27	Very gravelly sandy loam	GC	A-2-4	0-30	0-65	50-90	45-85	25-60
	27-37	Very gravelly loamy sand	GM	A-1-a	0-65	0-65	50-90	45-85	25-65
	37-57	Very gravelly loamy sand	GP-GM	A-1-a	0-65	0-65	50-90	45-85	25-65
	57-82	Very gravelly loamy sand	GM	A-1-a	0-65	0-65	50-90	45-85	25-65
841:									
Billscabin gravelly sandy loam	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-5	Gravelly sandy loam	SM	A-1-b	0-65	0-30	50-95	45-90	25-65
	5-14	Very gravelly sandy loam	GC-GM	A-1-b	0-65	0-30	50-95	45-90	25-65
	14-27	Very gravelly sandy loam	GC	A-2-4	0-30	0-65	50-90	45-85	25-60
	27-37	Very gravelly loamy sand	GM	A-1-a	0-65	0-65	50-90	45-85	25-65
	37-57	Very gravelly loamy sand	GP-GM	A-1-a	0-65	0-65	50-90	45-85	25-65
	57-82	Very gravelly loamy sand	GM	A-1-a	0-65	0-65	50-90	45-85	25-65

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
841:									
Bonneyridge sandy loam---------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60
842:									
Billscabin gravelly sandy loam	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-5	Gravelly sandy loam	SM	A-1-b	0-65	0-30	50-95	45-90	25-65
	5-14	Very gravelly sandy loam	GC-GM	A-1-b	0-65	0-30	50-95	45-90	25-65
	14-27	Very gravelly sandy loam	GC	A-2-4	0-30	0-65	50-90	45-85	25-60
	27-37	Very gravelly loamy sand	GM	A-1-a	0-65	0-65	50-90	45-85	25-65
	37-57	Very gravelly loamy sand	GP-GM	A-1-a	0-65	0-65	50-90	45-85	25-65
	57-82	Very gravelly loamy sand	GM	A-1-a	0-65	0-65	50-90	45-85	25-65

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
842:									
Bonneyridge sandy loam---------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60
846:									
Bonneyridge sandy loam---------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60
Lewisflat loam-----------------	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---
	3-5	Loam	OL	A-5	0	0	90-95	85-90	70-85
	5-9	Loam	CL	A-6	0	0	90-95	85-90	70-85
	9-18	Loam	CL	A-6	0	0	75-100	70-100	60-95
	18-33	Loam	CL	A-6	0	0	75-100	70-100	60-95
	33-49	Loam	CL	A-6	0	0	75-100	70-100	60-95
	49-65	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95
	65-75	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
847:									
Bonneyridge sandy loam---------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60
Lewisflat loam-----------------	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---
	3-5	Loam	OL	A-5	0	0	90-95	85-90	70-85
	5-9	Loam	CL	A-6	0	0	90-95	85-90	70-85
	9-18	Loam	CL	A-6	0	0	75-100	70-100	60-95
	18-33	Loam	CL	A-6	0	0	75-100	70-100	60-95
	33-49	Loam	CL	A-6	0	0	75-100	70-100	60-95
	49-65	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95
	65-75	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95
848:									
Bonneyridge sandy loam---------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-3	Sandy loam	SM	A-2-4	0	0	65-100	60-100	40-65
	3-6	Sandy loam	SM	A-2-4	0	0-10	65-100	60-100	40-60
	6-16	Coarse sandy loam	SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	16-22	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	22-31	Coarse sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-60
	31-39	Sandy loam	SC-SM	A-2-4	0-10	0-10	60-100	55-100	35-65
	39-56	Loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-75
	56-76	Gravelly loamy coarse sand	SM	A-2-4	0	0	60-100	55-100	35-60

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
848:									
Lewisflat loam----------	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---
	3-5	Loam	OL	A-5	0	0	90-95	85-90	70-85
	5-9	Loam	CL	A-6	0	0	90-95	85-90	70-85
	9-18	Loam	CL	A-6	0	0	75-100	70-100	60-95
	18-33	Loam	CL	A-6	0	0	75-100	70-100	60-95
	33-49	Loam	CL	A-6	0	0	75-100	70-100	60-95
	49-65	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95
	65-75	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95
850:									
Lewisflat loam----------	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---
	3-5	Loam	OL	A-5	0	0	90-95	85-90	70-85
	5-9	Loam	CL	A-6	0	0	90-95	85-90	70-85
	9-18	Loam	CL	A-6	0	0	75-100	70-100	60-95
	18-33	Loam	CL	A-6	0	0	75-100	70-100	60-95
	33-49	Loam	CL	A-6	0	0	75-100	70-100	60-95
	49-65	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95
	65-75	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95
851:									
Lewisflat loam----------	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---
	3-5	Loam	OL	A-5	0	0	90-95	85-90	70-85
	5-9	Loam	CL	A-6	0	0	90-95	85-90	70-85
	9-18	Loam	CL	A-6	0	0	75-100	70-100	60-95
	18-33	Loam	CL	A-6	0	0	75-100	70-100	60-95
	33-49	Loam	CL	A-6	0	0	75-100	70-100	60-95
	49-65	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95
	65-75	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95
852:									
Lewisflat loam----------	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---
	3-5	Loam	OL	A-5	0	0	90-95	85-90	70-85
	5-9	Loam	CL	A-6	0	0	90-95	85-90	70-85
	9-18	Loam	CL	A-6	0	0	75-100	70-100	60-95
	18-33	Loam	CL	A-6	0	0	75-100	70-100	60-95
	33-49	Loam	CL	A-6	0	0	75-100	70-100	60-95
	49-65	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95
	65-75	Loam	CL-ML	A-4	0	0	75-100	70-100	60-95

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
860:									
Toadtown gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-6	Gravelly loam	OH	A-7-5	0	0-10	65-100	60-100	40-95
	6-15	Silty clay loam	CL	A-7-6	0	0-2	75-100	70-100	65-95
	15-32	Silty clay	CH	A-7-6	0	0-2	75-100	70-100	65-10
	32-43	Silty clay	CH	A-7-5	0	0-2	75-100	70-100	65-10
	43-55	Cobbly silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-10
	55-80	Silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-10
Powellton silt loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Silt loam	OH	A-7-5	0	0	75-100	70-100	65-95
	3-9	Silt loam	ML	A-7-6	0	0	75-100	70-100	65-95
	9-19	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95
	19-28	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95
	28-33	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95
	33-48	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95
	48-66	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95
	66-73	Loam	CL	A-4	0	0-40	80-100	75-100	65-90
	73-83	Loam	CL-ML	A-4	0	0	100	100	65-90
	83-109	Loam	CL-ML	A-4	0	0	100	100	65-90
861:									
Toadtown gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-6	Gravelly loam	OH	A-7-5	0	0-10	65-100	60-100	40-95
	6-15	Silty clay loam	CL	A-7-6	0	0-2	75-100	70-100	65-95
	15-32	Silty clay	CH	A-7-6	0	0-2	75-100	70-100	65-10
	32-43	Silty clay	CH	A-7-5	0	0-2	75-100	70-100	65-10
	43-55	Cobbly silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-10
	55-80	Silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
861:									
Powellton silt loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Silt loam	OH	A-7-5	0	0	75-100	70-100	65-95
	3-9	Silt loam	ML	A-7-6	0	0	75-100	70-100	65-95
	9-19	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95
	19-28	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95
	28-33	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95
	33-48	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95
	48-66	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95
	66-73	Loam	CL	A-4	0	0-40	80-100	75-100	65-90
	73-83	Loam	CL-ML	A-4	0	0	100	100	65-90
	83-109	Loam	CL-ML	A-4	0	0	100	100	65-90
862:									
Toadtown gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-6	Gravelly loam	OH	A-7-5	0	0-10	65-100	60-100	40-95
	6-15	Silty clay loam	CL	A-7-6	0	0-2	75-100	70-100	65-95
	15-32	Silty clay	CH	A-7-6	0	0-2	75-100	70-100	65-10
	32-43	Silty clay	CH	A-7-5	0	0-2	75-100	70-100	65-10
	43-55	Cobbly silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-10
	55-80	Silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-10
Powellton silt loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Silt loam	OH	A-7-5	0	0	75-100	70-100	65-95
	3-9	Silt loam	ML	A-7-6	0	0	75-100	70-100	65-95
	9-19	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95
	19-28	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95
	28-33	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95
	33-48	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95
	48-66	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95
	66-73	Loam	CL	A-4	0	0-40	80-100	75-100	65-90
	73-83	Loam	CL-ML	A-4	0	0	100	100	65-90
	83-109	Loam	CL-ML	A-4	0	0	100	100	65-90

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
863:									
Toadtown gravelly loam---------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-6	Gravelly loam	OH	A-7-5	0	0-10	65-100	60-100	40-95
	6-15	Silty clay loam	CL	A-7-6	0	0-2	75-100	70-100	65-95
	15-32	Silty clay	CH	A-7-6	0	0-2	75-100	70-100	65-10
	32-43	Silty clay	CH	A-7-5	0	0-2	75-100	70-100	65-10
	43-55	Cobbly silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-10
	55-80	Silty clay loam	CL	A-7-6	0	0-30	55-100	50-100	45-10
Powellton silt loam----------	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Silt loam	OH	A-7-5	0	0	75-100	70-100	65-95
	3-9	Silt loam	ML	A-7-6	0	0	75-100	70-100	65-95
	9-19	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95
	19-28	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95
	28-33	Silty clay loam	CL	A-7-6	0	0-25	60-100	55-100	45-95
	33-48	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95
	48-66	Silt loam	CL	A-6	0	0-15	80-100	75-100	65-95
	66-73	Loam	CL	A-4	0	0-40	80-100	75-100	65-90
	73-83	Loam	CL-ML	A-4	0	0	100	100	65-90
	83-109	Loam	CL-ML	A-4	0	0	100	100	65-90
880:									
Sites taxadjunct gravelly loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly loam	OH	A-7-5	0	0	65-100	60-100	35-95
	3-10	Very gravelly loam	GM	A-2-7	0	0	45-100	40-100	35-10
	10-21	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-10
	21-34	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-10
	34-59	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-10
	59-72	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
880:									
Jocal taxadjunct gravelly loam	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---
	3-4	Gravelly loam	OL	A-5	0	0	75-95	70-90	50-85
	4-9	Gravelly loam	GM	A-4	0	0-10	60-100	55-100	40-95
	9-19	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-10
	19-33	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-10
	33-46	Very gravelly clay loam	GC	A-2-7	0	0-25	40-60	35-55	30-55
	46-52	Extremely gravelly clay loam	GP-GC	A-2-6	0	0-25	20-100	15-100	10-10
	52-68	Bedrock	---	---	0	0	---	---	---
881:									
Sites taxadjunct gravelly loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly loam	OH	A-7-5	0	0	65-100	60-100	35-95
	3-10	Very gravelly loam	GM	A-2-7	0	0	45-100	40-100	35-10
	10-21	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-10
	21-34	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-10
	34-59	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-10
	59-72	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-10
Jocal taxadjunct gravelly loam	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---
	3-4	Gravelly loam	OL	A-5	0	0	75-95	70-90	50-85
	4-9	Gravelly loam	GM	A-4	0	0-10	60-100	55-100	40-95
	9-19	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-10
	19-33	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-10
	33-46	Very gravelly clay loam	GC	A-2-7	0	0-25	40-60	35-55	30-55
	46-52	Extremely gravelly clay loam	GP-GC	A-2-6	0	0-25	20-100	15-100	10-10
	52-68	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
882:									
Sites taxadjunct gravelly loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly loam	OH	A-7-5	0	0	65-100	60-100	35-95
	3-10	Very gravelly loam	GM	A-2-7	0	0	45-100	40-100	35-10
	10-21	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-10
	21-34	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-10
	34-59	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-10
	59-72	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-10
Jocal taxadjunct gravelly loam	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---
	3-4	Gravelly loam	OL	A-5	0	0	75-95	70-90	50-85
	4-9	Gravelly loam	GM	A-4	0	0-10	60-100	55-100	40-95
	9-19	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-10
	19-33	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-10
	33-46	Very gravelly clay loam	GC	A-2-7	0	0-25	40-60	35-55	30-55
	46-52	Extremely gravelly clay loam	GP-GC	A-2-6	0	0-25	20-100	15-100	10-10
	52-68	Bedrock	---	---	0	0	---	---	---
883:									
Sites taxadjunct gravelly loam	0-1	Slightly decomposed plant material	PT	---	---	---	---	---	---
	1-3	Gravelly loam	OH	A-7-5	0	0	65-100	60-100	35-95
	3-10	Very gravelly loam	GM	A-2-7	0	0	45-100	40-100	35-10
	10-21	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-10
	21-34	Gravelly silty clay	CH	A-7-6	0	0	65-100	60-100	55-10
	34-59	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-10
	59-72	Silty clay	CH	A-7-6	0	0	65-100	60-100	55-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
883:									
Jocal taxadjunct gravelly loam	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---
	3-4	Gravelly loam	OL	A-5	0	0	75-95	70-90	50-85
	4-9	Gravelly loam	GM	A-4	0	0-10	60-100	55-100	40-95
	9-19	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-10
	19-33	Gravelly loam	GC	A-2-6	0	0-25	60-100	55-100	40-10
	33-46	Very gravelly clay loam	GC	A-2-7	0	0-25	40-60	35-55	30-55
	46-52	Extremely gravelly clay loam	GP-GC	A-2-6	0	0-25	20-100	15-100	10-10
	52-68	Bedrock	---	---	0	0	---	---	---
885:									
Rogerville silt loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-7	Silt loam	MH	A-7-5	0	0	85-95	75-90	65-90
	7-13	Silty clay loam	MH	A-7-5	0	0	40-90	35-85	30-80
	13-24	Silty clay	CH	A-7-6	0	0-15	55-100	50-100	45-95
	24-34	Gravelly silty clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95
	34-42	Gravelly clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95
	42-51	Extremely gravelly clay loam	SC	A-2-6	0	0-30	20-100	10-90	5-85
	51-55	Bedrock	---	---	0	0	---	---	---
886:									
Rogerville silt loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-7	Silt loam	MH	A-7-5	0	0	85-95	75-90	65-90
	7-13	Silty clay loam	MH	A-7-5	0	0	40-90	35-85	30-80
	13-24	Silty clay	CH	A-7-6	0	0-15	55-100	50-100	45-95
	24-34	Gravelly silty clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95
	34-42	Gravelly clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95
	42-51	Extremely gravelly clay loam	SC	A-2-6	0	0-30	20-100	10-90	5-85
	51-55	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
892:									
Rogerville silt loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-7	Silt loam	MH	A-7-5	0	0	85-95	75-90	65-90
	7-13	Silty clay loam	MH	A-7-5	0	0	40-90	35-85	30-80
	13-24	Silty clay	CH	A-7-6	0	0-15	55-100	50-100	45-95
	24-34	Gravelly silty clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95
	34-42	Gravelly clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95
	42-51	Extremely gravelly clay loam	SC	A-2-6	0	0-30	20-100	10-90	5-85
	51-55	Bedrock	---	---	0	0	---	---	---
893:									
Rogerville silt loam----------	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-7	Silt loam	MH	A-7-5	0	0	85-95	75-90	65-90
	7-13	Silty clay loam	MH	A-7-5	0	0	40-90	35-85	30-80
	13-24	Silty clay	CH	A-7-6	0	0-15	55-100	50-100	45-95
	24-34	Gravelly silty clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95
	34-42	Gravelly clay loam	CL	A-7-6	0	0-15	55-100	50-100	45-95
	42-51	Extremely gravelly clay loam	SC	A-2-6	0	0-30	20-100	10-90	5-85
	51-55	Bedrock	---	---	0	0	---	---	---
902:									
Lava flows, Lovejoy basalt.									
Lumpkin gravelly medial sandy loam----------	0-3	Gravelly medial sandy loam	---	---	0	0	30-75	25-70	15-50
	3-8	Extremely gravelly medial fine sandy loam	---	---	0	10-100	30-95	25-90	15-65
	8-14	Extremely cobbly medial sandy loam	---	---	0	10-100	30-95	25-90	15-65
	14	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
903:									
Mudwash gravelly medial sandy loam----------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Moderately decomposed plant material	PT	---	0	0	---	---	---
	4-8	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85
	8-13	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85
	13-26	Gravelly medial sandy loam	---	---	0	0-10	65-95	60-90	35-85
	26-35	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95
	35-52	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95
	52-72	Extremely gravelly loam	GP-GC	A-2-6	0	0	15-95	10-90	5-85
	72-89	Bedrock	---	---	0	0	---	---	---
Timberisland very gravelly medial sandy loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-6	Very gravelly medial sandy loam	---	---	0-15	0-15	50-95	45-90	25-65
	6-14	Very gravelly medial sandy loam	---	---	0-15	0-15	50-95	45-90	25-65
	14-25	Very gravelly medial sandy loam	---	---	0-25	0-30	50-60	45-55	25-40
	25-35	Extremely cobbly medial sandy loam	---	---	0-15	40-90	30-90	25-85	15-60
	35-48	Extremely cobbly medial sandy loam	---	---	0-15	40-90	30-90	25-85	15-60
	48	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
903:									
Lavatop gravelly medial fine sandy loam	0-0.5	Slightly decomposed plant material	PT	---	0	0	---	---	---
	0.5-4	Gravelly medial fine sandy loam	---	---	0	0-55	50-90	45-85	25-60
	4-15	Very gravelly medial sandy loam	---	---	0-75	0-65	50-90	45-55	25-40
	15-26	Extremely gravelly medial sandy loam	---	---	0-75	0-65	50-90	45-55	25-50
	26	Bedrock	---	---	0	0	---	---	---
904:									
Lava flows, Lovejoy basalt.									
Lavatop gravelly medial fine sandy loam	0-0.5	Slightly decomposed plant material	PT	---	0	0	---	---	---
	0.5-4	Gravelly medial fine sandy loam	---	---	0	0-55	50-90	45-85	25-60
	4-15	Very gravelly medial sandy loam	---	---	0-75	0-65	50-90	45-55	25-40
	15-26	Extremely gravelly medial sandy loam	---	---	0-75	0-65	50-90	45-55	25-50
	26	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
905:									
Lava flows, Lovejoy basalt.									
Lumpkin gravelly medial sandy loam----------	0-3	Gravelly medial sandy loam	---	---	0	0	30-75	25-70	15-50
	3-8	Extremely gravelly medial fine sandy loam	---	---	0	10-100	30-95	25-90	15-65
	8-14	Extremely cobbly medial sandy loam	---	---	0	10-100	30-95	25-90	15-65
	14	Bedrock	---	---	0	0	---	---	---
906:									
Lava flows, Lovejoy basalt.									
Lumpkin gravelly medial sandy loam----------	0-3	Gravelly medial sandy loam	---	---	0	0	30-75	25-70	15-50
	3-8	Extremely gravelly medial fine sandy loam	---	---	0	10-100	30-95	25-90	15-65
	8-14	Extremely cobbly medial sandy loam	---	---	0	10-100	30-95	25-90	15-65
	14	Bedrock	---	---	0	0	---	---	---
911:									
Endoaquolls loam----------	0-3	Loam	CL	A-6	0	0	95-100	90-100	70-10
	3-8	Loam	CL	A-6	0	0	95-100	90-100	70-10
	8-17	Clay loam	CL	A-6	0	0	95-100	90-100	70-10
	17-28	Silty clay	CL	A-7-6	0	0	95-100	90-100	80-10
	28-43	Silty clay	CH	A-7-6	0	0	95-100	90-100	80-10
	43-58	Loam	CL	A-6	0	0-15	90-100	85-100	75-10
	58-73	Sandy clay loam	CL	A-6	0	0-15	90-100	85-100	75-10

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
923:									
Powderhouse medial sandy loam--	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-4	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65
	4-11	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65
	11-27	Very cobbly medial sandy loam	---	---	0-30	0-50	50-75	45-70	25-50
	27-36	Very gravelly medial coarse sandy loam	---	---	0-30	0-50	30-40	25-35	15-25
	36-82	Bedrock	---	---	0-15	15-65	---	---	---
McNair medial coarse sandy loam	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---
	3-6	Medial coarse sandy loam	---	---	0	0	90-95	85-90	50-65
	6-16	Gravelly medial coarse sandy loam	---	---	0-10	0-10	90-95	85-90	50-65
	16-25	Very gravelly medial sandy loam	---	---	0-15	0-45	40-60	35-55	20-35
	25-33	Very gravelly medial sandy loam	---	---	0-15	0-45	40-55	35-50	20-35
	33-48	Very gravelly medial sandy loam	---	---	0-15	0-45	40-55	35-50	20-35
	48-57	Extremely gravelly coarse sandy loam	GP-GM	A-1-a	0-40	0-15	15-30	10-25	5-20
	57-88	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
923:									
Greenwell medial sandy loam----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-3	Moderately decomposed plant material	PT	---	0	0	---	---	---
	3-5	Medial sandy loam	---	---	0	0	65-100	60-100	40-70
	5-10	Medial sandy loam	---	---	0	0	65-100	60-100	40-70
	10-18	Gravelly medial sandy loam	---	---	0	0-10	65-100	60-100	40-70
	18-23	Medial sandy loam	---	---	0	0-15	60-100	50-100	35-70
	23-32	Very gravelly medial sandy loam	---	---	0	0-15	30-55	25-50	20-35
	32	Bedrock	---	---	0	0	---	---	---
924:									
Powderhouse medial sandy loam--	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-4	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65
	4-11	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65
	11-27	Very cobbly medial sandy loam	---	---	0-30	0-50	50-75	45-70	25-50
	27-36	Very gravelly medial coarse sandy loam	---	---	0-30	0-50	30-40	25-35	15-25
	36-82	Bedrock	---	---	0-15	15-65	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
924:									
McNair medial coarse sandy loam	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---
	3-6	Medial coarse sandy loam	---	---	0	0	90-95	85-90	50-65
	6-16	Gravelly medial coarse sandy loam	---	---	0-10	0-10	90-95	85-90	50-65
	16-25	Very gravelly medial sandy loam	---	---	0-15	0-45	40-60	35-55	20-35
	25-33	Very gravelly medial sandy loam	---	---	0-15	0-45	40-55	35-50	20-35
	33-48	Very gravelly medial sandy loam	---	---	0-15	0-45	40-55	35-50	20-35
	48-57	Extremely gravelly coarse sandy loam	GP-GM	A-1-a	0-40	0-15	15-30	10-25	5-20
	57-88	Bedrock	---	---	0	0	---	---	---
Greenwell medial sandy loam----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-3	Moderately decomposed plant material	PT	---	0	0	---	---	---
	3-5	Medial sandy loam	---	---	0	0	65-100	60-100	40-70
	5-10	Medial sandy loam	---	---	0	0	65-100	60-100	40-70
	10-18	Gravelly medial sandy loam	---	---	0	0-10	65-100	60-100	40-70
	18-23	Medial sandy loam	---	---	0	0-15	60-100	50-100	35-70
	23-32	Very gravelly medial sandy loam	---	---	0	0-15	30-55	25-50	20-35
	32	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
925:									
Powderhouse medial sandy loam--	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-4	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65
	4-11	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65
	11-27	Very cobbly medial sandy loam	---	---	0-30	0-50	50-75	45-70	25-50
	27-36	Very gravelly medial coarse sandy loam	---	---	0-30	0-50	30-40	25-35	15-25
	36-82	Bedrock	---	---	0-15	15-65	---	---	---
McNair medial coarse sandy loam	0-3	Slightly decomposed plant material	PT	---	0	0	---	---	---
	3-6	Medial coarse sandy loam	---	---	0	0	90-95	85-90	50-65
	6-16	Gravelly medial coarse sandy loam	---	---	0-10	0-10	90-95	85-90	50-65
	16-25	Very gravelly medial sandy loam	---	---	0-15	0-45	40-60	35-55	20-35
	25-33	Very gravelly medial sandy loam	---	---	0-15	0-45	40-55	35-50	20-35
	33-48	Very gravelly medial sandy loam	---	---	0-15	0-45	40-55	35-50	20-35
	48-57	Extremely gravelly coarse sandy loam	GP-GM	A-1-a	0-40	0-15	15-30	10-25	5-20
	57-88	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
925:									
Greenwell medial sandy loam----	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-3	Moderately decomposed plant material	PT	---	0	0	---	---	---
	3-5	Medial sandy loam	---	---	0	0	65-100	60-100	40-70
	5-10	Medial sandy loam	---	---	0	0	65-100	60-100	40-70
	10-18	Gravelly medial sandy loam	---	---	0	0-10	65-100	60-100	40-70
	18-23	Medial sandy loam	---	---	0	0-15	60-100	50-100	35-70
	23-32	Very gravelly medial sandy loam	---	---	0	0-15	30-55	25-50	20-35
	32	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
930:									
Shakeridge gravelly medial coarse sandy loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50
	4-7	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50
	7-19	Extremely gravelly medial coarse sandy loam	---	---	0-80	0-65	25-90	20-85	10-60
	19-25	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	25-36	Very gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	36-55	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	55-71	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	71-87	Extremely gravelly coarse sandy loam	GP-GC	A-2-6	0-80	10-65	25-90	20-85	10-60

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
930:									
Timberisland very gravelly medial sandy loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-6	Very gravelly medial sandy loam	---	---	0-15	0-15	50-95	45-90	25-65
	6-14	Very gravelly medial sandy loam	---	---	0-15	0-15	50-95	45-90	25-65
	14-25	Very gravelly medial sandy loam	---	---	0-25	0-30	50-60	45-55	25-40
	25-35	Extremely cobbly medial sandy loam	---	---	0-15	40-90	30-90	25-85	15-60
	35-48	Extremely cobbly medial sandy loam	---	---	0-15	40-90	30-90	25-85	15-60
	48	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
931:									
Shakeridge gravelly medial coarse sandy loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50
	4-7	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50
	7-19	Extremely gravelly medial coarse sandy loam	---	---	0-80	0-65	25-90	20-85	10-60
	19-25	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	25-36	Very gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	36-55	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	55-71	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	71-87	Extremely gravelly coarse sandy loam	GP-GC	A-2-6	0-80	10-65	25-90	20-85	10-60

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
931:									
Mudwash gravelly medial sandy loam----------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Moderately decomposed plant material	PT	---	0	0	---	---	---
	4-8	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85
	8-13	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85
	13-26	Gravelly medial sandy loam	---	---	0	0-10	65-95	60-90	35-85
	26-35	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95
	35-52	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95
	52-72	Extremely gravelly loam	GP-GC	A-2-6	0	0	15-95	10-90	5-85
	72-89	Bedrock	---	---	0	0	---	---	---
Timberisland very gravelly medial sandy loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	---	---	---	---	---	---
	3-6	Very gravelly medial sandy loam	---	---	0-15	0-15	50-95	45-90	25-65
	6-14	Very gravelly medial sandy loam	---	---	0-15	0-15	50-95	45-90	25-65
	14-25	Very gravelly medial sandy loam	---	---	0-25	0-30	50-60	45-55	25-40
	25-35	Extremely cobbly medial sandy loam	---	---	0-15	40-90	30-90	25-85	15-60
	35-48	Extremely cobbly medial sandy loam	---	---	0-15	40-90	30-90	25-85	15-60
	48	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passi sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
932:									
Shakeridge gravelly medial coarse sandy loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50
	4-7	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50
	7-19	Extremely gravelly medial coarse sandy loam	---	---	0-80	0-65	25-90	20-85	10-60
	19-25	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	25-36	Very gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	36-55	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	55-71	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	71-87	Extremely gravelly coarse sandy loam	GP-GC	A-2-6	0-80	10-65	25-90	20-85	10-60

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
932:									
Mudwash gravelly medial sandy loam----------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Moderately decomposed plant material	PT	---	0	0	---	---	---
	4-8	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85
	8-13	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85
	13-26	Gravelly medial sandy loam	---	---	0	0-10	65-95	60-90	35-85
	26-35	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95
	35-52	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95
	52-72	Extremely gravelly loam	GP-GC	A-2-6	0	0	15-95	10-90	5-85
	72-89	Bedrock	---	---	0	0	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
933:									
Shakeridge gravelly medial coarse sandy loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-4	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50
	4-7	Gravelly medial coarse sandy loam	---	---	0	0-30	30-75	25-70	15-50
	7-19	Extremely gravelly medial coarse sandy loam	---	---	0-80	0-65	25-90	20-85	10-60
	19-25	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	25-36	Very gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	36-55	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	55-71	Extremely gravelly medial coarse sandy loam	---	---	0-80	10-65	25-90	20-85	10-60
	71-87	Extremely gravelly coarse sandy loam	GP-GC	A-2-6	0-80	10-65	25-90	20-85	10-60

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
934:									
Mudwash gravelly medial sandy loam----------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Moderately decomposed plant material	PT	---	0	0	---	---	---
	4-8	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85
	8-13	Gravelly medial sandy loam	---	---	0	10-15	75-95	70-90	40-85
	13-26	Gravelly medial sandy loam	---	---	0	0-10	65-95	60-90	35-85
	26-35	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95
	35-52	Gravelly loam	SC	A-6	0	0-30	75-100	70-100	40-95
	52-72	Extremely gravelly loam	GP-GC	A-2-6	0	0	15-95	10-90	5-85
	72-89	Bedrock	---	---	0	0	---	---	---
939:									
Fluvaquentic Humaquepts very fine sandy loam----------	0-7	Very fine sandy loam	ML	A-4	0	0	90-100	85-100	70-95
	7-15	Very fine sandy loam	ML	A-4	0	0	90-100	85-100	70-95
	15-22	Loam	CL	A-6	0	0	95-100	90-100	75-95
	22-29	Loam	CL	A-6	0	0	95-100	90-100	75-95
	29-36	Loam	CL	A-6	0	0	95-100	90-100	75-95
	36-45	Gravelly clay loam	CL	A-6	0	0	60-75	55-70	50-65
	45-60	Gravelly loam	GC	A-2-6	0	0	45-60	40-55	35-50
940:									
Dejonah gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Gravelly loam	SM	A-5	0	0-10	50-95	45-90	25-85
	4-10	Loam	ML	A-7-5	0	0-10	75-95	70-90	40-85
	10-16	Loam	ML	A-7-6	0	0-25	60-100	55-100	40-95
	16-28	Loam	CL	A-6	0	0-25	60-100	55-100	40-95
	28-37	Loam	CL	A-4	0	0-25	60-100	55-100	40-95
	37-53	Sandy loam	SC-SM	A-2-4	0	0-30	20-100	10-100	5-95
	53-60	Loam	CL	A-4	0	0-30	20-100	10-100	5-95

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
940:									
Stagpoint loam----------	0-0.5	Slightly decomposed plant material	PT	---	0	0	---	---	---
	0.5-4	Loam	SM	A-2-5	0	0	55-95	50-90	30-85
	4-10	Gravelly loam	SM	A-5	0	0-25	50-90	45-85	25-80
	10-17	Very gravelly loam	GM	A-2-6	0	0-25	50-90	45-85	25-80
	17-23	Very gravelly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80
	23-34	Extremely cobbly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80
	34-49	Extremely cobbly loam	CL	A-4	10-65	10-65	15-100	10-100	5-70
	49-64	Extremely stony loam	CL	A-4	10-65	10-65	15-100	10-100	5-95
	64-86	Very stony loam	CL-ML	A-4	45-65	10-15	15-100	10-100	5-95
941:									
Dejonah gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Gravelly loam	SM	A-5	0	0-10	50-95	45-90	25-85
	4-10	Loam	ML	A-7-5	0	0-10	75-95	70-90	40-85
	10-16	Loam	ML	A-7-6	0	0-25	60-100	55-100	40-95
	16-28	Loam	CL	A-6	0	0-25	60-100	55-100	40-95
	28-37	Loam	CL	A-4	0	0-25	60-100	55-100	40-95
	37-53	Sandy loam	SC-SM	A-2-4	0	0-30	20-100	10-100	5-95
	53-60	Loam	CL	A-4	0	0-30	20-100	10-100	5-95
Stagpoint loam----------	0-0.5	Slightly decomposed plant material	PT	---	0	0	---	---	---
	0.5-4	Loam	SM	A-2-5	0	0	55-95	50-90	30-85
	4-10	Gravelly loam	SM	A-5	0	0-25	50-90	45-85	25-80
	10-17	Very gravelly loam	GM	A-2-6	0	0-25	50-90	45-85	25-80
	17-23	Very gravelly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80
	23-34	Extremely cobbly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80
	34-49	Extremely cobbly loam	CL	A-4	10-65	10-65	15-100	10-100	5-70
	49-64	Extremely stony loam	CL	A-4	10-65	10-65	15-100	10-100	5-95
	64-86	Very stony loam	CL-ML	A-4	45-65	10-15	15-100	10-100	5-95

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
942:									
Stagpoint loam----------	0-0.5	Slightly decomposed plant material	PT	---	0	0	---	---	---
	0.5-4	Loam	SM	A-2-5	0	0	55-95	50-90	30-85
	4-10	Gravelly loam	SM	A-5	0	0-25	50-90	45-85	25-80
	10-17	Very gravelly loam	GM	A-2-6	0	0-25	50-90	45-85	25-80
	17-23	Very gravelly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80
	23-34	Extremely cobbly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80
	34-49	Extremely cobbly loam	CL	A-4	10-65	10-65	15-100	10-100	5-70
	49-64	Extremely stony loam	CL	A-4	10-65	10-65	15-100	10-100	5-95
	64-86	Very stony loam	CL-ML	A-4	45-65	10-15	15-100	10-100	5-95
Dejonah gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Gravelly loam	SM	A-5	0	0-10	50-95	45-90	25-85
	4-10	Loam	ML	A-7-5	0	0-10	75-95	70-90	40-85
	10-16	Loam	ML	A-7-6	0	0-25	60-100	55-100	40-95
	16-28	Loam	CL	A-6	0	0-25	60-100	55-100	40-95
	28-37	Loam	CL	A-4	0	0-25	60-100	55-100	40-95
	37-53	Sandy loam	SC-SM	A-2-4	0	0-30	20-100	10-100	5-95
	53-60	Loam	CL	A-4	0	0-30	20-100	10-100	5-95
948:									
Stagpoint loam----------	0-0.5	Slightly decomposed plant material	PT	---	0	0	---	---	---
	0.5-4	Loam	SM	A-2-5	0	0	55-95	50-90	30-85
	4-10	Gravelly loam	SM	A-5	0	0-25	50-90	45-85	25-80
	10-17	Very gravelly loam	GM	A-2-6	0	0-25	50-90	45-85	25-80
	17-23	Very gravelly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80
	23-34	Extremely cobbly loam	GC	A-2-6	0-45	10-65	25-90	20-85	10-80
	34-49	Extremely cobbly loam	CL	A-4	10-65	10-65	15-100	10-100	5-70
	49-64	Extremely stony loam	CL	A-4	10-65	10-65	15-100	10-100	5-95
	64-86	Very stony loam	CL-ML	A-4	45-65	10-15	15-100	10-100	5-95

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
948:									
Dejonah gravelly loam----------	0-1	Slightly decomposed plant material	PT	---	0	0	---	---	---
	1-4	Gravelly loam	SM	A-5	0	0-10	50-95	45-90	25-85
	4-10	Loam	ML	A-7-5	0	0-10	75-95	70-90	40-85
	10-16	Loam	ML	A-7-6	0	0-25	60-100	55-100	40-95
	16-28	Loam	CL	A-6	0	0-25	60-100	55-100	40-95
	28-37	Loam	CL	A-4	0	0-25	60-100	55-100	40-95
	37-53	Sandy loam	SC-SM	A-2-4	0	0-30	20-100	10-100	5-95
	53-60	Loam	CL	A-4	0	0-30	20-100	10-100	5-95
949:									
Rogerville taxadjunct fine sandy loam----------	0-2	Slightly decomposed plant material	PT	---	---	---	---	---	---
	2-4	Fine sandy loam	ML	A-4	0	0	90-100	85-100	55-85
	4-7	Gravelly sandy loam	GM	A-2-4	0	0	50-75	45-70	35-65
	7-21	Very gravelly sandy loam	GM	A-2-6	0	0-15	50-75	45-70	35-65
	21-26	Very gravelly loam	GC	A-2-6	0	0-15	50-75	45-70	35-65
	26-33	Gravelly silt loam	CL	A-6	0-15	0-15	75-90	70-85	65-80
	33-44	Gravelly silt loam	CL	A-6	0-15	0-15	75-90	70-85	65-80
	44-57	Gravelly silty clay loam	CL	A-6	0-15	0-15	75-100	70-100	65-95
	57	Bedrock	---	---	---	---	---	---	---
950:									
Lumpkin taxadjunct very gravelly medial very fine sandy loam----------	0-4	Very gravelly medial very fine sandy loam	---	---	0	0-15	30-55	25-50	30-45
	4-9	Very gravelly medial very fine sandy loam	---	---	0	0-15	30-55	25-40	30-35
	9	Bedrock	---	---	---	---	---	---	---

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
950:									
Rock outcrop, olivine basalt, andesite, or mudflow.									
Powderhouse medial sandy loam--	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-4	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65
	4-11	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65
	11-27	Very cobbly medial sandy loam	---	---	0-30	0-50	50-75	45-70	25-50
	27-36	Very gravelly medial coarse sandy loam	---	---	0-30	0-50	30-40	25-35	15-25
	36-82	Bedrock	---	---	0-15	15-65	---	---	---
951:									
Lumpkin taxadjunct very gravelly medial very fine sandy loam----------	0-4	Very gravelly medial very fine sandy loam	---	---	0	0-15	30-55	25-50	30-45
	4-9	Very gravelly medial very fine sandy loam	---	---	0	0-15	30-55	25-40	30-35
	9	Bedrock	---	---	---	---	---	---	---
Rock outcrop, andesite.									

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
951:									
Powderhouse medial sandy loam--	0-2	Slightly decomposed plant material	PT	---	0	0	---	---	---
	2-4	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65
	4-11	Medial sandy loam	---	---	0-15	0-10	75-95	70-90	40-65
	11-27	Very cobbly medial sandy loam	---	---	0-30	0-50	50-75	45-70	25-50
	27-36	Very gravelly medial coarse sandy loam	---	---	0-30	0-50	30-40	25-35	15-25
	36-82	Bedrock	---	---	0-15	15-65	---	---	---
960:									
Surnuf gravelly loam, high elevation----------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-6	Gravelly loam	GM	A-4	0	0	65-80	60-75	50-70
	6-10	Gravelly loam	SC	A-6	0	0	75-95	70-90	60-85
	10-20	Clay loam	CL	A-7-6	0-10	0-15	80-90	75-85	65-80
	20-28	Clay loam	CH	A-7-6	0-10	0-15	30-90	75-85	65-80
	28-38	Gravelly clay	CH	A-7-6	0-10	0-15	80-90	70-85	65-80
	38-52	Gravelly clay	CH	A-7-6	0-10	0-15	65-90	60-85	60-80
	52-67	Gravelly clay	CH	A-7-6	0-10	0-15	60-90	55-85	55-80
	67-84	Gravelly clay	GC	A-7-6	0-10	0-15	55-90	50-85	50-80
961:									
Surnuf gravelly loam, high elevation----------	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-6	Gravelly loam	GM	A-4	0	0	65-80	60-75	50-70
	6-10	Gravelly loam	SC	A-6	0	0	75-95	70-90	60-85
	10-20	Clay loam	CL	A-7-6	0-10	0-15	80-90	75-85	65-80
	20-28	Clay loam	CH	A-7-6	0-10	0-15	30-90	75-85	65-80
	28-38	Gravelly clay	CH	A-7-6	0-10	0-15	80-90	70-85	65-80
	38-52	Gravelly clay	CH	A-7-6	0-10	0-15	65-90	60-85	60-80
	52-67	Gravelly clay	CH	A-7-6	0-10	0-15	60-90	55-85	55-80
	67-84	Gravelly clay	GC	A-7-6	0-10	0-15	55-90	50-85	50-80

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
962:									
Surnuf gravelly loam, high elevation	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-6	Gravelly loam	GM	A-4	0	0	65-80	60-75	50-70
	6-10	Gravelly loam	SC	A-6	0	0	75-95	70-90	60-85
	10-20	Clay loam	CL	A-7-6	0-10	0-15	80-90	75-85	65-80
	20-28	Clay loam	CH	A-7-6	0-10	0-15	30-90	75-85	65-80
	28-38	Gravelly clay	CH	A-7-6	0-10	0-15	80-90	70-85	65-80
	38-52	Gravelly clay	CH	A-7-6	0-10	0-15	65-90	60-85	60-80
	52-67	Gravelly clay	CH	A-7-6	0-10	0-15	60-90	55-85	55-80
	67-84	Gravelly clay	GC	A-7-6	0-10	0-15	55-90	50-85	50-80
963:									
Surnuf gravelly loam, high elevation	0-0.5	Slightly decomposed plant material	PT	---	---	---	---	---	---
	0.5-6	Gravelly loam	GM	A-4	0	0	65-80	60-75	50-70
	6-10	Gravelly loam	SC	A-6	0	0	75-95	70-90	60-85
	10-20	Clay loam	CL	A-7-6	0-10	0-15	80-90	75-85	65-80
	20-28	Clay loam	CH	A-7-6	0-10	0-15	30-90	75-85	65-80
	28-38	Gravelly clay	CH	A-7-6	0-10	0-15	80-90	70-85	65-80
	38-52	Gravelly clay	CH	A-7-6	0-10	0-15	65-90	60-85	60-80
	52-67	Gravelly clay	CH	A-7-6	0-10	0-15	60-90	55-85	55-80
	67-84	Gravelly clay	GC	A-7-6	0-10	0-15	55-90	50-85	50-80
990.									
Riverwash, frequently flooded									
991:									
Xerofluvents sandy loam, frequently flooded	0-6	Sandy loam	SM	A-4	0	0-55	25-100	20-100	15-70
	6-14	Sandy loam	SM	A-4	0	0-50	15-100	10-100	5-75
	14-26	Sandy loam	SM	A-4	0	0-50	15-100	10-100	5-75
	26-37	Sandy loam	SM	A-4	0	0-50	15-100	10-100	5-75
	37-43	Sandy loam	SM	A-4	0	0-25	80-100	75-100	40-85
	43-47	Loamy sand	SM	A-2-4	0	0-50	15-100	10-100	5-75
	47-54	Sandy loam	SM	A-4	0	0-50	15-100	10-100	5-75
	54-72	Loamy sand	SM	A-2-4	0	0-50	15-100	10-100	5-75
	72-80	Sandy loam	SM	A-4	0	0-50	15-100	10-100	5-75

Table 20.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number-		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
995. Pits, gravel									
996. Dumps, excavated material									
997. Pits									
998. Dumps, landfill									
999. Water									
DAM. Dam, manmade									

Table 21.--Physical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
100:						
Anita clay	0-1	45-55	0.60-1.00	0.09-0.16	9.0-12.0	2.0-5.0
	1-3	45-55	0.60-1.00	0.09-0.16	9.0-12.0	0.5-2.0
	3-10	50-60	0.42-0.90	0.08-0.16	10.5-13.5	0.5-2.0
	10-15	50-60	0.42-0.90	0.08-0.16	10.5-13.5	0.5-2.0
	15-20	---	0.00-0.01	---	---	0.0-0.2
Galt clay	0-3	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0
	3-13	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0
	13-29	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	29-32	37-60	0.42-2.20	0.14-0.18	6.5-13.5	0.2-0.8
	32-39	---	0.00-0.01	---	---	---
104:						
Bosquejo clay	0-8	40-50	0.50-1.40	0.15-0.16	9.0-11.5	2.0-5.0
	8-19	40-55	0.45-1.40	0.14-0.16	9.0-12.0	1.0-2.0
	19-24	40-55	0.45-1.40	0.14-0.16	9.0-12.0	1.0-2.0
	24-37	30-45	1.00-3.50	0.15-0.20	4.5-9.0	0.1-0.5
	37-44	20-35	1.40-7.00	0.17-0.21	1.0-6.0	0.1-0.5
	44-46	20-35	1.40-7.00	0.17-0.21	1.0-6.0	0.1-0.5
	46-60	18-27	4.00-9.00	0.16-0.18	0.0-3.0	0.0-0.3
105:						
Busacca clay loam	0-3	30-40	1.40-3.50	0.17-0.20	4.5-7.5	1.0-5.0
	3-8	30-40	1.40-3.50	0.17-0.20	4.5-7.5	1.0-5.0
	8-16	35-42	1.20-2.50	0.17-0.19	6.0-8.0	0.2-2.0
	16-28	35-42	1.20-2.50	0.17-0.19	6.0-8.0	0.2-2.0
	28-43	35-42	1.20-2.50	0.17-0.19	6.0-8.0	0.2-2.0
	43-60	25-35	2.50-5.00	0.18-0.21	3.0-6.0	0.1-1.0
	60-72	25-35	2.50-5.00	0.18-0.21	3.0-6.0	0.1-1.0
108:						
Tuscan gravelly loam	0-2	20-27	1.40-8.00	0.12-0.17	2.0-3.0	1.0-4.0
	2-4	30-55	0.42-3.00	0.05-0.19	4.5-9.0	0.4-1.0
	4-7	30-55	0.42-3.00	0.05-0.19	4.5-9.0	0.4-1.0
	7-11	30-55	0.42-3.00	0.05-0.19	4.5-9.0	0.4-1.0
	7	---	0.00-0.01	---	---	---
Igo gravelly loam	0-1	18-30	3.00-9.00	0.10-0.21	1.0-4.5	1.0-4.0
	1-5	22-36	2.00-6.00	0.11-0.21	2.0-6.0	0.4-2.0
	5-9	22-36	2.00-6.00	0.11-0.21	2.0-6.0	0.4-2.0
	9	---	0.00-0.01	---	---	---
Anita clay	0-1	45-55	0.60-1.00	0.09-0.16	9.0-12.0	2.0-5.0
	1-3	45-55	0.60-1.00	0.09-0.16	9.0-12.0	0.5-2.0
	3-10	50-60	0.42-0.90	0.08-0.16	10.5-13.5	0.5-2.0
	10-15	50-60	0.42-0.90	0.08-0.16	10.5-13.5	0.5-2.0
	15-20	---	0.00-0.01	---	---	0.0-0.2
109:						
Bosquejo clay loam	0-5	27-40	1.40-4.00	0.17-0.21	3.0-9.0	2.0-5.0
	5-24	40-55	0.45-1.40	0.14-0.17	9.0-12.0	1.0-2.0
	24-40	40-55	0.45-1.40	0.14-0.17	9.0-12.0	1.0-2.0
	40-60	20-35	1.40-7.00	0.17-0.21	1.0-6.0	0.1-0.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
110:						
Bosquejo silt loam, overwash, occasionally flooded	0-8	18-27	4.00-9.00	0.18-0.20	0.0-3.0	2.0-5.0
	8-22	40-50	0.50-1.40	0.15-0.16	9.0-11.5	2.0-5.0
	22-40	40-55	0.45-1.40	0.14-0.16	9.0-12.0	1.0-2.0
	40-55	20-35	1.40-7.00	0.17-0.21	1.0-6.0	0.1-1.0
	55-70	20-35	1.40-7.00	0.17-0.21	1.0-6.0	0.1-1.0
111yu:						
Auburn loam	0-17	12-25	4.00-14.00	0.14-0.17	0.0-2.9	1.0-2.0
	17	---	---	---	---	---
Sobrante loam	0-5	10-25	4.00-14.00	0.13-0.17	0.0-2.9	1.0-3.0
	5-27	25-35	4.00-14.00	0.13-0.18	3.0-5.9	0.0-0.5
	27-39	---	---	---	---	---
	39	---	---	---	---	---
114yu:						
Auburn gravelly loam	0-17	12-25	4.00-14.00	0.11-0.15	0.0-2.9	1.0-2.0
	---	---	---	---	---	---
Sobrante gravelly loam	0-5	10-25	4.00-14.00	0.10-0.13	0.0-2.9	1.0-3.0
	5-35	25-35	4.00-14.00	0.11-0.14	3.0-5.9	0.0-0.5
	35-40	---	---	---	---	---
	40	---	---	---	---	---
118:						
Xerorthents, tailings	0-3	10-16	16.00-30.00	0.04-0.10	0.0-2.0	0.5-1.0
	3-8	15-18	14.00-42.00	0.02-0.05	0.0-2.0	0.1-0.5
	8-21	3-7	42.00-705.00	0.01-0.14	0.0-2.0	0.1-0.5
	21-26	3-7	42.00-705.00	0.01-0.14	0.0-2.0	0.0-0.5
	26-35	3-7	42.00-705.00	0.01-0.14	0.0-2.0	0.0-0.5
	35-48	3-7	42.00-705.00	0.01-0.14	0.0-2.0	0.0-0.5
	48-59	3-7	42.00-705.00	0.01-0.14	0.0-2.0	0.0-0.5
	59-81	3-7	42.00-705.00	0.01-0.14	0.0-2.0	0.0-0.5
118co:						
Clear Lake clay, frequently flooded	0-4	40-60	0.42-1.40	0.14-0.16	6.0-9.0	1.0-4.0
	4-10	40-60	0.42-1.40	0.14-0.16	6.0-9.0	1.0-4.0
	10-20	40-60	0.42-1.40	0.14-0.16	9.0-12.0	1.0-4.0
	20-34	40-60	0.42-1.40	0.14-0.16	9.0-12.0	1.0-4.0
	34-47	40-60	0.42-1.40	0.14-0.16	9.0-12.0	1.0-4.0
	47-59	40-60	0.42-1.40	0.14-0.16	9.0-12.0	0.5-1.0
	59-79	40-60	0.42-1.40	0.14-0.16	9.0-12.0	0.5-1.0
119:						
Xerorthents, tailings	0-3	10-16	16.00-30.00	0.04-0.10	0.0-2.0	0.5-1.0
	3-8	15-18	14.00-42.00	0.02-0.05	0.0-2.0	0.1-0.5
	8-21	3-7	42.00-705.00	0.01-0.14	0.0-2.0	0.1-0.5
	21-26	3-7	42.00-705.00	0.01-0.14	0.0-2.0	0.0-0.5
	26-35	3-7	42.00-705.00	0.01-0.14	0.0-2.0	0.0-0.5
	35-48	3-7	42.00-705.00	0.01-0.14	0.0-2.0	0.0-0.5
	48-59	3-7	42.00-705.00	0.01-0.14	0.0-2.0	0.0-0.5
	59-81	3-7	42.00-705.00	0.01-0.14	0.0-2.0	0.0-0.5
Urban land.						

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
119yu:						
Auburn gravelly loam---------	0-17	12-25	4.00-14.00	0.11-0.15	0.0-2.9	1.0-2.0
	17	---	---	---	---	---
Sobrante gravelly loam-------	0-5	10-25	4.00-14.00	0.10-0.13	0.0-2.9	1.0-3.0
	5-35	25-35	4.00-14.00	0.11-0.14	3.0-5.9	0.0-0.5
	35-40	---	---	---	---	---
	40	---	---	---	---	---
Rock outcrop.						
120:						
Gridley taxadjunct clay loam	0-4	27-30	2.00-4.00	0.20-0.21	3.0-4.0	1.0-3.0
	4-9	35-50	0.80-2.00	0.15-0.21	6.0-9.0	1.0-3.0
	9-15	35-50	0.80-2.00	0.15-0.21	6.0-9.0	0.0-1.0
	15-21	30-50	0.80-3.00	0.15-0.21	4.0-9.0	0.0-1.0
	21-60	5-25	0.00-0.05	---	---	0.0-0.0
121:						
Boga loam---------------------	0-3	18-27	4.00-8.00	0.16-0.20	1.0-6.0	1.0-3.0
	3-6	18-27	4.00-8.00	0.16-0.20	1.0-6.0	1.0-3.0
	6-14	20-40	1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0
	14-29	20-40	1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0
	29-53	20-40	1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0
	53-73	20-40	1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0
	73-80	5-20	0.02-0.42	---	0.0-1.0	0.1-0.2
Loemstone loam----------------	0-2	18-27	4.00-8.00	0.16-0.20	1.0-6.0	1.0-3.0
	2-4	18-27	4.00-8.00	0.16-0.20	1.0-6.0	1.0-3.0
	4-10	18-27	4.00-8.00	0.16-0.20	1.0-6.0	1.0-3.0
	10-18	20-40	1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0
	18-23	20-40	1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0
	23-32	20-40	1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0
	32-40	20-40	1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0
	40-48	20-40	1.40-7.00	0.16-0.21	2.0-7.5	0.2-1.0
	48-57	5-20	0.02-0.42	---	0.0-1.0	0.1-0.2
121su:						
Columbia fine sandy loam, frequently flooded----------	0-14	8-18	14.00-42.00	0.10-0.12	0.0-2.9	0.5-2.0
	14-60	10-18	14.00-42.00	0.10-0.12	0.0-2.9	0.5-1.0
125:						
Gridley taxadjunct loam------	0-10	25-27	4.00-5.00	0.17-0.18	2.6-6.0	1.0-3.0
	10-20	35-50	0.80-2.00	0.15-0.21	5.8-9.0	1.0-3.0
	20-22	30-50	0.80-3.00	0.15-0.21	4.0-9.0	0.0-1.0
	22-60	---	0.00-0.01	---	---	---
Calcic Haploxerolls sandy loam------------------------	0-5	15-23	11.00-17.00	0.12-0.17	0.0-2.9	1.0-2.0
	5-17	15-25	8.00-17.00	0.12-0.17	0.0-2.9	1.0-2.0
	17-20	12-27	4.00-20.00	0.12-0.18	0.0-2.9	1.0-2.0
	20-33	12-27	4.00-20.00	0.12-0.18	0.0-2.9	1.0-2.0
	33-44	12-20	12.00-20.00	0.08-0.13	0.0-2.9	1.0-2.0
	44-72	---	0.02-0.42	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
126:						
Liveoak sandy loam----------	0-4	16-20	14.00-21.00	0.12-0.13	0.0-1.0	1.5-3.0
	4-17	16-20	14.00-21.00	0.12-0.13	0.0-1.0	1.5-3.0
	17-37	12-25	3.00-26.00	0.11-0.18	0.0-3.0	0.5-1.0
	37-48	12-25	3.00-26.00	0.11-0.18	0.0-3.0	0.5-1.0
	48-61	12-25	3.00-26.00	0.11-0.18	0.0-3.0	0.2-0.4
	61-71	4-19	14.00-90.00	0.05-0.13	0.0-1.0	0.1-0.4
	71-75	4-19	14.00-90.00	0.05-0.13	0.0-1.0	0.1-0.4
127:						
Gridley taxadjunct loam------	0-10	25-27	4.00-5.00	0.17-0.18	2.6-6.0	1.0-3.0
	10-20	35-50	0.80-2.00	0.15-0.21	5.8-9.0	1.0-3.0
	20-22	30-50	0.80-3.00	0.15-0.21	4.0-9.0	0.0-1.0
	22-60	---	0.00-0.05	---	---	---
130:						
Eastbiggs loam----------	0-3	15-27	4.00-14.00	0.15-0.18	0.0-3.0	0.5-1.0
	3-10	15-27	4.00-17.00	0.15-0.18	0.0-3.0	0.2-0.8
	10-17	20-35	4.00-12.00	0.17-0.18	2.0-6.0	0.1-0.5
	17-27	40-50	0.90-2.00	0.15-0.19	5.0-9.0	0.1-0.3
	27-34	---	0.00-0.01	---	---	---
	34-60	---	0.00-0.01	---	---	---
133:						
Eastbiggs loam----------	0-3	15-27	4.00-14.00	0.15-0.18	0.0-3.0	0.5-1.0
	3-10	15-27	4.00-17.00	0.15-0.18	0.0-3.0	0.2-0.8
	10-17	20-35	4.00-12.00	0.17-0.18	2.0-6.0	0.1-0.5
	17-27	40-50	0.90-2.00	0.15-0.19	5.0-9.0	0.1-0.3
	27-34	---	0.00-0.01	---	---	---
	34-60	---	0.00-0.01	---	---	---
Galt clay loam----------	0-6	30-40	1.40-2.50	0.17-0.20	4.0-9.0	1.0-2.0
	6-20	30-60	0.42-2.50	0.14-0.20	4.0-13.5	1.0-2.0
	20-27	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	27-30	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	30	---	0.00-0.01	---	---	---
136:						
Duric Xerarents, cut---------	0-3	17-45	1.00-15.00	0.12-0.21	0.8-9.0	0.1-0.5
	3-8	25-48	1.00-8.00	0.14-0.21	2.6-9.0	0.1-0.5
	8-10	25-48	1.00-8.00	0.14-0.21	2.6-9.0	0.1-0.5
	10-13	42-55	0.60-1.30	0.15-0.16	8.0-9.0	0.1-0.3
	13	---	0.00-0.01	---	---	---
Duric Xerarents, fill--------	0-5	16-35	2.00-16.00	0.12-0.21	0.8-5.8	1.0-2.0
	5-12	22-42	1.30-12.00	0.17-0.21	1.6-8.0	0.1-0.5
	12-16	45-55	0.60-1.20	0.15-0.16	8.9-9.0	0.1-0.3
	16-30	0-15	14.00-42.00	0.01-0.13	0.0-0.7	0.0-0.3
	30-38	22-42	1.30-12.00	0.14-0.21	1.6-8.0	0.1-0.3
	38-48	22-42	1.30-12.00	0.14-0.21	1.6-8.0	0.1-0.3
	48	---	0.00-0.01	---	---	---
Eastbiggs fine sandy loam, leveled----------	0-5	15-27	4.00-17.00	0.15-0.18	0.7-3.0	0.5-1.0
	5-12	15-27	4.00-17.00	0.15-0.18	0.7-3.0	0.2-0.8
	12-18	20-30	3.00-12.00	0.15-0.18	1.0-4.2	0.1-0.5
	18-23	20-30	3.00-12.00	0.15-0.18	1.0-4.2	0.1-0.5
	23-26	27-35	2.00-3.50	0.19-0.21	3.0-6.0	0.1-0.3
	26-30	40-50	0.90-1.40	0.15-0.16	7.0-9.0	0.1-0.3
	30	---	0.00-0.01	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
138su:						
Liveoak sandy clay loam------	0-13	14-25	4.00-14.00	0.15-0.18	0.0-3.0	1.0-3.0
	13-53	15-25	4.00-14.00	0.11-0.19	0.0-3.0	1.0-2.0
	53-60	5-19	14.00-100.00	0.05-0.13	0.0-3.0	0.5-1.0
139su:						
Liveoak taxadjunct loam, frequently flooded----------	0-6	18-25	4.00-14.00	0.15-0.17	0.0-2.9	0.5-1.0
	6-54	18-25	4.00-14.00	0.15-0.17	0.0-2.9	0.5-1.0
	54-63	---	0.00-0.01	---	---	0.0-0.0
	63-73	10-18	4.00-14.00	0.13-0.15	0.0-2.9	0.0-0.5
Galt taxadjunct clay loam, frequently flooded----------	0-21	27-35	1.40-4.00	0.18-0.20	3.0-5.9	0.5-1.0
	21-22	0-0	0.00-0.01	---	---	---
	22-25	10-20	4.00-14.00	0.14-0.16	0.0-2.9	0.5-1.0
	25-26	---	0.00-0.01	---	---	---
	26	---	---	---	---	---
143su:						
Marcum clay loam----------	0-16	27-35	1.40-4.00	0.17-0.19	3.0-5.9	1.0-2.0
	16-28	30-40	1.40-4.00	0.17-0.19	3.0-5.9	0.5-1.0
	28-40	40-60	0.42-1.40	0.14-0.16	6.0-8.9	0.0-0.5
	40-43	30-40	1.40-4.00	0.17-0.19	3.0-5.9	0.0-0.5
	43-62	---	0.00-0.01	---	---	---
Gridley clay loam----------	0-19	27-35	1.40-4.00	0.17-0.20	3.0-5.9	1.0-2.0
	19-37	35-55	0.42-1.40	0.14-0.17	6.0-8.9	0.5-1.0
	37	---	0.00-0.01	---	---	---
149yu:						
Flanly sandy loam----------	0-9	8-20	4.00-14.00	0.14-0.17	0.0-2.9	1.0-2.0
	9-16	18-25	4.00-14.00	0.14-0.17	0.0-2.9	0.0-1.0
	16-34	25-35	1.40-4.00	0.17-0.19	3.0-5.9	0.0-0.5
	34-38	---	---	---	---	0.0-0.5
150:						
Columbia stratified sand to fine sandy loam----------	0-5	5-20	12.00-80.00	0.06-0.17	0.0-2.9	1.0-3.0
	5-10	5-18	14.00-80.00	0.04-0.17	0.0-2.9	0.5-2.0
	10-29	5-18	14.00-80.00	0.04-0.17	0.0-2.9	0.5-2.0
	29-37	5-18	14.00-80.00	0.04-0.17	0.0-2.9	0.5-1.0
	37-46	5-18	14.00-80.00	0.04-0.17	0.0-2.9	0.5-1.0
	46-60	5-18	14.00-80.00	0.04-0.17	0.0-2.9	0.5-1.0
150su:						
Olashes sandy loam----------	0-4	15-20	14.00-42.00	0.09-0.12	0.0-2.9	1.0-2.0
	4-52	20-35	1.40-4.00	0.13-0.16	3.0-5.9	1.0-2.0
	52-60	5-10	42.00-141.00	0.04-0.07	0.0-2.9	0.5-1.0
151yu:						
Flanly sandy loam----------	0-9	8-20	4.00-14.00	0.14-0.17	0.0-2.9	1.0-2.0
	9-16	18-25	4.00-14.00	0.14-0.17	0.0-2.9	0.0-1.0
	16-34	25-35	1.40-4.00	0.17-0.19	3.0-5.9	0.0-0.5
	34-38	---	---	---	---	0.0-0.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
152:						
Gianella fine sandy loam, frequently flooded	0-6	4-20	14.00-38.00	0.13-0.15	0.0-0.0	1.0-5.0
	6-15	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	15-20	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	20-22	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	22-27	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	27-32	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	32-43	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	43-64	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	64-80	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
153:						
Gianella sandy loam, frequently flooded	0-6	4-20	14.00-38.00	0.10-0.13	0.0-0.0	1.0-5.0
	6-17	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	17-24	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	24-29	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	29-32	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	32-43	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	43-57	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	57-67	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	67-68	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	68-71	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	71-80	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	80-84	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
154:						
Gianella silt loam, frequently flooded	0-2	4-22	6.00-12.00	0.15-0.19	0.0-1.0	1.0-5.0
	2-8	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	8-15	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	15-22	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	22-31	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	31-41	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	41-50	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	50-54	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	54-64	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	64-66	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	66-69	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	69-83	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
158:						
Gianella fine sandy loam, occasionally flooded	0-3	4-20	14.00-42.00	0.13-0.15	0.0-0.0	1.0-5.0
	3-12	4-20	14.00-42.00	0.13-0.15	0.0-0.0	1.0-5.0
	12-19	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	19-28	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	28-48	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	48-57	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	57-80	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
160:						
Gianella loam, occasionally flooded	0-18	7-22	6.00-14.00	0.14-0.17	0.0-1.0	1.0-5.0
	18-42	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	42-52	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	52-70	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
161:						
Gianella fine sandy loam, rarely flooded	0-3	4-20	14.00-42.00	0.13-0.15	0.0-0.0	1.0-5.0
	3-12	4-20	14.00-42.00	0.13-0.15	0.0-0.0	1.0-5.0
	12-19	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	19-28	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	28-48	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	48-57	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	57-80	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
162:						
Gianella loam, rarely flooded	0-18	7-22	6.00-14.00	0.14-0.17	0.0-1.0	1.0-5.0
	18-42	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	42-52	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
	52-70	1-15	8.00-141.00	0.05-0.17	0.0-0.0	0.2-1.5
163yu:						
Holillipah loamy sand	0-6	0-10	42.00-141.00	0.06-0.08	0.0-2.9	1.0-2.0
	6-66	0-10	14.00-42.00	0.06-0.09	0.0-2.9	0.0-0.5
165yu:						
Holland loam	0-15	12-25	4.00-14.00	0.14-0.16	0.0-2.9	2.0-5.0
	15-65	25-35	4.00-14.00	0.14-0.18	3.0-5.9	0.0-0.5
Hoda loam	0-7	7-18	4.00-14.00	0.14-0.16	0.0-2.9	2.0-6.0
	7-14	18-30	4.00-14.00	0.15-0.18	0.0-2.9	0.0-0.5
	14-72	35-50	1.40-4.00	0.14-0.16	3.0-5.9	0.0-0.5
Hotaw loam	0-12	7-15	4.00-14.00	0.14-0.16	0.0-2.9	1.0-5.0
	12-34	20-35	4.00-14.00	0.14-0.18	3.0-5.9	0.0-0.5
	34	---	---	---	---	---
173yu:						
Hotaw loam	0-12	7-15	4.00-14.00	0.14-0.16	0.0-2.9	1.0-5.0
	12-34	20-35	4.00-14.00	0.14-0.18	3.0-5.9	0.0-0.5
	34	---	---	---	---	---
Chawanakee gravelly sandy loam	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
Holland loam	0-15	12-25	4.00-14.00	0.14-0.16	0.0-2.9	2.0-5.0
	15-65	25-35	4.00-14.00	0.14-0.18	3.0-5.9	0.0-0.5
175:						
Farwell clay loam, rarely flooded	0-5	27-35	2.00-4.00	0.18-0.21	3.0-6.0	1.0-2.5
	5-9	27-35	2.00-4.00	0.18-0.21	3.0-6.0	1.0-2.5
	9-18	27-35	2.00-4.00	0.18-0.21	3.0-6.0	1.0-2.0
	18-26	27-35	2.00-4.00	0.18-0.21	3.0-6.0	1.0-2.0
	26-33	27-35	2.00-4.00	0.18-0.21	3.0-6.0	1.0-2.0
	33-43	27-40	1.40-4.00	0.18-0.21	3.0-6.0	1.0-2.0
	43-57	27-40	1.40-4.00	0.18-0.21	3.0-6.0	1.0-2.0
	57-72	27-35	2.00-4.00	0.18-0.21	3.0-6.0	0.1-1.0
	72-81	20-35	1.40-12.00	0.13-0.17	1.0-6.0	0.1-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
176:						
Farwell loam, occasionally flooded	0-6	20-25	8.00-12.00	0.17-0.18	1.0-2.6	1.0-2.5
	6-20	20-25	8.00-12.00	0.17-0.19	1.0-2.6	1.0-2.0
	20-36	20-25	8.00-12.00	0.17-0.19	1.0-2.6	1.0-2.0
	36-50	27-35	2.00-4.00	0.19-0.21	3.0-6.0	1.0-2.0
	50-60	22-27	4.00-12.00	0.17-0.18	1.6-3.5	0.1-1.0
176yu:						
Jocal loam	0-8	15-27	4.00-14.00	0.13-0.17	0.0-2.9	2.0-5.0
	8-73	27-35	4.00-14.00	0.15-0.19	3.0-5.9	0.0-0.5
177:						
Farwell silt loam, occasionally flooded	0-6	12-27	4.00-20.00	0.17-0.20	0.6-3.0	1.0-2.5
	6-11	20-40	1.40-21.00	0.17-0.21	1.0-7.3	1.0-2.5
	11-22	25-35	2.00-21.00	0.19-0.21	2.5-6.0	1.0-2.0
	22-33	25-35	2.00-21.00	0.19-0.21	2.5-6.0	1.0-2.0
	33-39	25-35	2.00-21.00	0.19-0.21	2.5-6.0	1.0-2.0
	39-49	20-30	2.50-20.00	0.17-0.20	1.0-4.2	0.5-2.0
	49-62	20-30	2.50-20.00	0.17-0.20	1.0-4.2	0.2-2.0
178:						
Arbuckle gravelly loam	0-4	20-24	10.00-13.00	0.11-0.15	1.0-3.0	0.5-0.8
	4-9	20-24	10.00-13.00	0.11-0.15	1.0-3.0	0.0-0.8
	9-20	24-35	2.00-10.00	0.12-0.19	2.0-6.0	0.0-0.5
	20-32	24-35	2.00-10.00	0.12-0.19	2.0-6.0	0.0-0.5
	32-49	24-35	2.00-10.00	0.12-0.19	2.0-6.0	0.0-0.5
	49-68	24-26	6.00-10.00	0.03-0.09	2.0-3.0	0.0-0.5
	68-86	20-26	6.00-13.00	0.03-0.09	1.0-3.0	0.0-0.5
179:						
Moda taxadjunct loam	0-2	10-20	12.00-30.00	0.14-0.16	0.0-1.0	0.5-0.8
	2-6	10-20	12.00-30.00	0.14-0.16	0.0-1.0	0.0-0.8
	6-13	24-30	3.00-10.00	0.15-0.20	2.0-4.0	0.0-0.5
	13-22	45-50	0.60-1.20	0.14-0.17	8.9-9.0	0.0-0.5
	---	---	0.00-0.01	---	---	---
Arbuckle gravelly loam	0-4	20-24	10.00-13.00	0.11-0.15	1.0-3.0	0.5-0.8
	4-9	20-24	10.00-13.00	0.11-0.15	1.0-3.0	0.0-0.8
	9-20	24-35	2.00-10.00	0.12-0.19	2.0-6.0	0.0-0.5
	20-32	24-35	2.00-10.00	0.12-0.19	2.0-6.0	0.0-0.5
	32-49	24-35	2.00-10.00	0.12-0.19	2.0-6.0	0.0-0.5
	49-68	24-26	6.00-10.00	0.03-0.09	2.0-3.0	0.0-0.5
	68-86	20-26	6.00-13.00	0.03-0.09	1.0-3.0	0.0-0.5
180:						
Dodgeland silty clay loam, occasionally flooded	0-4	30-40	1.40-3.00	0.17-0.20	4.0-9.1	1.0-3.0
	4-8	40-45	1.20-1.40	0.15-0.17	9.0-9.5	1.0-3.0
	8-18	45-55	0.60-1.20	0.14-0.16	9.5-12.0	0.5-1.5
	18-33	45-55	0.60-1.20	0.14-0.16	9.5-12.0	0.5-1.5
	33-45	45-55	0.60-1.20	0.14-0.16	9.5-12.0	0.5-1.0
	45-53	40-55	0.60-1.40	0.14-0.17	9.0-12.0	0.2-0.5
	53-60	18-35	2.00-14.00	0.17-0.21	1.0-6.0	0.1-0.3
	60-70	18-35	2.00-14.00	0.17-0.21	1.0-6.0	0.1-0.3
	70-80	18-35	2.00-14.00	0.17-0.21	1.0-6.0	0.1-0.3

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
181:						
Dodgeland silty clay loam, frequently flooded	0-4	30-40	1.40-3.00	0.17-0.20	4.0-9.1	1.0-3.0
	4-8	40-45	1.20-1.40	0.15-0.17	9.0-9.5	1.0-3.0
	8-18	45-55	0.60-1.20	0.14-0.16	9.5-12.0	0.5-1.5
	18-33	45-55	0.60-1.20	0.14-0.16	9.5-12.0	0.5-1.5
	33-45	45-55	0.60-1.20	0.14-0.16	9.5-12.0	0.5-1.0
	45-53	40-55	0.60-1.40	0.14-0.17	9.0-12.0	0.2-0.5
	53-60	18-35	2.00-14.00	0.17-0.21	1.0-6.0	0.1-0.3
	60-70	18-35	2.00-14.00	0.17-0.21	1.0-6.0	0.1-0.3
	70-80	18-35	2.00-14.00	0.17-0.21	1.0-6.0	0.1-0.3
188yu:						
Mariposa taxadjunct gravelly loam	0-4	10-20	4.00-14.00	0.09-0.14	0.0-2.9	1.0-3.0
	4-23	20-35	4.00-14.00	0.10-0.14	0.0-2.9	0.0-1.0
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189:						
Esquon silt loam, overwash	0-4	12-27	4.00-20.00	0.16-0.20	1.0-3.0	1.0-2.0
	4-9	12-27	4.00-20.00	0.16-0.20	1.0-3.0	0.5-1.0
	9-15	12-27	4.00-20.00	0.16-0.20	1.0-3.0	0.1-0.5
	15-35	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.5-1.0
	35-48	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.1-0.5
	48-60	27-60	0.42-4.00	0.14-0.21	3.0-13.5	0.1-0.5
	60	---	0.00-0.01	---	---	---
189yu:						
Mariposa taxadjunct gravelly loam	0-4	10-20	4.00-14.00	0.09-0.14	0.0-2.9	1.0-3.0
	4-23	20-35	4.00-14.00	0.10-0.14	0.0-2.9	0.0-1.0
	23	---	---	---	---	---
196yu:						
Mildred cobbly loam	0-3	18-27	4.00-14.00	0.10-0.13	0.0-2.9	1.0-2.0
	3-9	27-35	1.40-4.00	0.12-0.15	3.0-5.9	0.0-0.5
	9-23	35-60	0.01-0.42	0.14-0.16	6.0-8.9	0.0-0.5
	23	---	---	---	---	---
200:						
Parrott silt loam, occasionally flooded	0-2	18-27	4.00-14.00	0.18-0.20	0.9-3.0	2.0-5.0
	2-8	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0
	8-20	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0
	20-37	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-2.0
	37-49	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-2.0
	49-63	12-30	3.00-20.00	0.12-0.20	0.6-4.0	0.2-1.0
	63-89	12-30	3.00-20.00	0.12-0.20	0.6-4.0	0.2-1.0
201:						
Parrott silt loam, frequently flooded	0-2	18-27	4.00-14.00	0.18-0.20	0.9-3.0	2.0-5.0
	2-8	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0
	8-20	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0
	20-37	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-2.0
	37-49	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-2.0
	49-63	12-30	3.00-20.00	0.12-0.20	0.6-4.0	0.2-1.0
	63-89	12-30	3.00-20.00	0.12-0.20	0.6-4.0	0.2-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
203:						
Kusalslough silty clay loam, occasionally flooded	0-4	28-35	2.00-4.00	0.19-0.21	4.0-6.0	1.0-4.0
	4-12	28-35	2.00-4.00	0.19-0.21	4.0-6.0	1.0-4.0
	12-21	30-40	1.40-3.00	0.17-0.20	4.5-7.5	0.5-2.0
	21-31	30-40	1.40-3.00	0.17-0.20	4.5-7.5	1.0-3.0
	31-41	35-40	1.40-2.00	0.17-0.19	6.0-7.5	0.5-2.0
	41-57	40-55	0.45-1.40	0.15-0.17	7.5-12.0	0.1-1.6
	57-69	40-55	0.45-1.40	0.15-0.17	7.5-12.0	0.1-1.6
	69-80	40-55	0.45-1.40	0.15-0.17	7.5-12.0	0.1-1.6
205:						
Parrott silt loam, frequently flooded	0-2	18-27	4.00-14.00	0.18-0.20	0.9-3.0	2.0-5.0
	2-8	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0
	8-20	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0
	20-37	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-2.0
	37-49	18-27	4.00-14.00	0.18-0.20	0.9-3.0	1.0-2.0
	49-63	12-30	3.00-20.00	0.12-0.20	0.6-4.0	0.2-1.0
	63-89	12-30	3.00-20.00	0.12-0.20	0.6-4.0	0.2-1.0
Vermet silt loam, frequently flooded	0-2	18-25	8.00-14.00	0.18-0.20	0.9-3.0	2.0-5.0
	2-8	18-25	8.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0
	8-13	18-25	8.00-14.00	0.18-0.20	0.9-3.0	1.0-3.0
	13-16	29-35	2.00-3.00	0.19-0.21	3.0-6.0	1.0-2.0
	16-26	29-35	2.00-3.00	0.19-0.21	3.0-6.0	1.0-2.0
	26-41	29-35	2.00-3.00	0.19-0.21	3.0-6.0	0.5-1.0
	41-62	30-40	1.40-3.00	0.19-0.21	3.0-7.3	0.2-1.0
	62-72	30-40	1.40-3.00	0.17-0.21	3.0-7.3	0.2-1.0
206:						
Islandbar sandy loam	0-2	---	---	---	---	---
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2
Chawanakee gravelly sandy loam	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
207:						
Islandbar sandy loam	0-2	---	---	---	---	---
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
207:						
Chawanakee gravelly sandy loam	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
208:						
Islandbar sandy loam	0-2	---	---	---	---	---
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2
Chawanakee gravelly sandy loam	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
209:						
Islandbar sandy loam	0-2	---	---	---	---	---
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2
Chawanakee gravelly sandy loam	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
210:						
Featherfalls sandy loam	0-1	---	---	---	---	---
	1-4	8-23	11.00-42.00	0.07-0.18	0.4-2.0	2.0-4.0
	4-7	8-23	11.00-42.00	0.07-0.18	0.4-2.0	1.0-2.0
	7-17	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5
	17-24	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5
	24-32	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.5-1.0
	32-42	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.1-0.5
	42-61	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2
	61-72	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2
	72-80	5-27	4.00-80.00	0.02-0.17	0.0-3.0	0.0-0.1

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
210:						
Islandbar sandy loam---------	0-2	---	---	---	---	---
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2
211:						
Featherfalls sandy loam------	0-1	---	---	---	---	---
	1-4	8-23	11.00-42.00	0.07-0.18	0.4-2.0	2.0-4.0
	4-7	8-23	11.00-42.00	0.07-0.18	0.4-2.0	1.0-2.0
	7-17	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5
	17-24	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5
	24-32	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.5-1.0
	32-42	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.1-0.5
	42-61	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2
	61-72	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2
	72-80	5-27	4.00-80.00	0.02-0.17	0.0-3.0	0.0-0.1
Islandbar sandy loam---------	0-2	---	---	---	---	---
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2
212:						
Featherfalls sandy loam------	0-1	---	---	---	---	---
	1-4	8-23	11.00-42.00	0.07-0.18	0.4-2.0	2.0-4.0
	4-7	8-23	11.00-42.00	0.07-0.18	0.4-2.0	1.0-2.0
	7-17	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5
	17-24	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5
	24-32	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.5-1.0
	32-42	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.1-0.5
	42-61	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2
	61-72	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2
	72-80	5-27	4.00-80.00	0.02-0.17	0.0-3.0	0.0-0.1
Islandbar sandy loam---------	0-2	---	---	---	---	---
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
213:						
Featherfalls sandy loam------	0-1	---	---	---	---	---
	1-4	8-23	11.00-42.00	0.07-0.18	0.4-2.0	2.0-4.0
	4-7	8-23	11.00-42.00	0.07-0.18	0.4-2.0	1.0-2.0
	7-17	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5
	17-24	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.8-1.5
	24-32	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.5-1.0
	32-42	16-33	2.00-18.00	0.08-0.18	0.8-5.0	0.1-0.5
	42-61	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2
	61-72	25-38	1.60-8.00	0.13-0.17	2.6-7.0	0.0-0.2
	72-80	5-27	4.00-80.00	0.02-0.17	0.0-3.0	0.0-0.1
Islandbar sandy loam---------	0-2	---	---	---	---	---
	2-5	10-18	14.00-42.00	0.10-0.13	0.0-1.0	2.0-4.0
	5-9	10-18	14.00-42.00	0.10-0.13	0.0-1.0	1.0-2.0
	9-27	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.8-1.5
	27-36	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.5-1.0
	36-47	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	47-58	5-18	14.00-42.00	0.07-0.13	0.0-1.0	0.1-0.5
	58-62	2-18	14.00-100.00	0.03-0.13	0.0-1.0	0.0-0.2
	62-72	2-18	14.00-100.00	0.01-0.13	0.0-1.0	0.0-0.2
214:						
Crystalhill gravelly coarse sandy loam------------------	0-2	---	---	---	---	---
	2-7	5-8	35.00-80.00	0.07-0.11	0.0-1.0	1.0-2.5
	7-14	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.5-1.0
	14-22	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.1-0.5
	22-33	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	33-44	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	44-66	1-14	18.00-141.00	0.02-0.11	0.0-1.0	0.0-0.2
	66	---	0.02-0.42	---	---	---
Oregongulch gravelly sandy loam------------------------	0-1	---	---	---	---	---
	1-4	5-12	17.00-130.00	0.06-0.12	0.0-1.0	1.0-2.5
	4-7	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.5-1.0
	7-13	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.1-0.5
	13-18	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.0-0.2
	18-24	3-13	17.00-130.00	0.05-0.10	0.0-1.0	0.0-0.2
	24-60	0-10	0.02-0.42	---	0.0-1.0	0.0-0.0
Craigsaddle coarse sandy loam	0-5	5-10	30.00-80.00	0.08-0.10	0.0-1.0	1.0-2.5
	5-11	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	11-17	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	17-21	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.1-0.5
	21-31	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	31-51	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	51-58	13-25	8.00-20.00	0.09-0.17	0.0-3.0	0.0-0.2
	58-80	---	0.02-0.42	---	0.0-1.0	0.0-0.2
Rock outcrop, trondhjemite.						
215:						
Crystalhill gravelly coarse sandy loam------------------	0-2	---	---	---	---	---
	2-7	5-8	35.00-80.00	0.07-0.11	0.0-1.0	1.0-2.5
	7-14	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.5-1.0
	14-22	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.1-0.5
	22-33	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	33-44	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	44-66	1-14	18.00-141.00	0.02-0.11	0.0-1.0	0.0-0.2
	---	---	0.02-0.42	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
215:						
Oregongulch gravelly sandy loam	0-1	---	---	---	---	---
	1-4	5-12	17.00-130.00	0.06-0.12	0.0-1.0	1.0-2.5
	4-7	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.5-1.0
	7-13	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.1-0.5
	13-18	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.0-0.2
	18-24	3-13	17.00-130.00	0.05-0.10	0.0-1.0	0.0-0.2
	24-60	0-10	0.02-0.42	---	0.0-1.0	0.0-0.0
Craigsaddle coarse sandy loam	0-5	5-10	30.00-80.00	0.08-0.10	0.0-1.0	1.0-2.5
	5-11	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	11-17	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	17-21	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.1-0.5
	21-31	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	31-51	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	51-58	13-25	8.00-20.00	0.09-0.17	0.0-3.0	0.0-0.2
	58-80	---	0.02-0.42	---	0.0-1.0	0.0-0.2
Rock outcrop, trondhjemite.						
216:						
Crystalhill gravelly coarse sandy loam	0-2	---	---	---	---	---
	2-7	5-8	35.00-80.00	0.07-0.11	0.0-1.0	1.0-2.5
	7-14	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.5-1.0
	14-22	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.1-0.5
	22-33	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	33-44	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	44-66	1-14	18.00-141.00	0.02-0.11	0.0-1.0	0.0-0.2
	66	---	0.02-0.42	---	---	---
Oregongulch gravelly sandy loam	0-1	---	---	---	---	---
	1-4	5-12	17.00-130.00	0.06-0.12	0.0-1.0	1.0-2.5
	4-7	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.5-1.0
	7-13	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.1-0.5
	13-18	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.0-0.2
	18-24	3-13	17.00-130.00	0.05-0.10	0.0-1.0	0.0-0.2
	24-60	0-10	0.02-0.42	---	0.0-1.0	0.0-0.0
Craigsaddle coarse sandy loam	0-5	5-10	30.00-80.00	0.08-0.10	0.0-1.0	1.0-2.5
	5-11	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	11-17	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	17-21	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.1-0.5
	21-31	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	31-51	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	51-58	13-25	8.00-20.00	0.09-0.17	0.0-3.0	0.0-0.2
	58-80	---	0.02-0.42	---	0.0-1.0	0.0-0.2
Rock outcrop, trondhjemite.						

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
217:						
Crystalhill gravelly coarse sandy loam	0-2	---	---	---	---	---
	2-7	5-8	35.00-80.00	0.07-0.11	0.0-1.0	1.0-2.5
	7-14	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.5-1.0
	14-22	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.1-0.5
	22-33	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	33-44	5-12	20.00-80.00	0.07-0.12	0.0-1.0	0.0-0.2
	44-66	1-14	18.00-141.00	0.02-0.11	0.0-1.0	0.0-0.2
	66	---	0.02-0.42	---	---	---
Oregongulch gravelly sandy loam	0-1	---	---	---	---	---
	1-4	5-12	17.00-130.00	0.06-0.12	0.0-1.0	1.0-2.5
	4-7	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.5-1.0
	7-13	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.1-0.5
	13-18	3-15	17.00-130.00	0.06-0.11	0.0-1.0	0.0-0.2
	18-24	3-13	17.00-130.00	0.05-0.10	0.0-1.0	0.0-0.2
	24-60	0-10	0.02-0.42	---	0.0-1.0	0.0-0.0
Craigsaddle coarse sandy loam	0-5	5-10	30.00-80.00	0.08-0.10	0.0-1.0	1.0-2.5
	5-11	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	11-17	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.5-1.0
	17-21	8-12	20.00-38.00	0.06-0.11	0.0-1.0	0.1-0.5
	21-31	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	31-51	15-27	4.00-17.00	0.09-0.18	0.0-3.0	0.0-0.2
	51-58	13-25	8.00-20.00	0.09-0.17	0.0-3.0	0.0-0.2
	58-80	---	0.02-0.42	---	0.0-1.0	0.0-0.2
Rock outcrop, trondhjemite.						
218:						
Rock outcrop, quartz diorite.						
Lithic Xerorthents gravelly sandy loam	0-2	---	---	---	---	---
	2-4	6-8	35.00-60.00	0.07-0.11	0.0-0.5	1.0-5.0
	4-8	6-10	30.00-60.00	0.06-0.10	0.0-0.5	0.1-1.5
	8	---	---	---	---	---
Chawanakee gravelly sandy loam	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
219:						
Rock outcrop, quartz diorite.						
Lithic Xerorthents gravelly sandy loam	0-2	---	---	---	---	---
	2-4	6-8	35.00-60.00	0.07-0.11	0.0-0.5	1.0-5.0
	4-8	6-10	30.00-60.00	0.06-0.10	0.0-0.5	0.1-1.5
	8	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
219:						
Chawanakee gravelly sandy loam	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
220:						
Esquon clay, frequently flooded	0-10	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.5
	10-22	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.5-1.0
	22-40	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.4-1.0
	40-50	25-45	0.42-8.00	0.14-0.21	3.0-11.0	0.1-0.5
	50	---	0.00-0.01	---	3.0-6.0	---
Clear Lake silty clay loam, overwash	0-0.5	35-40	1.40-2.00	0.17-0.19	8.0-9.0	1.0-2.0
	0.5-7	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.5
	7-19	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.5-1.0
	19-29	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.4-1.0
	29-40	35-60	0.42-2.00	0.14-0.19	8.0-13.5	0.1-0.5
	40-55	35-60	0.42-2.00	0.14-0.19	8.0-13.5	0.1-0.5
	55-80	35-60	0.42-2.00	0.14-0.19	8.0-13.5	0.1-0.5
221yu:						
Sites loam	0-6	15-27	4.00-14.00	0.14-0.17	0.0-2.9	2.0-10
	6-16	27-35	4.00-14.00	0.16-0.18	3.0-5.9	0.0-0.5
	16-51	35-60	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.5
	51-61	27-35	4.00-14.00	0.15-0.18	3.0-5.9	0.0-0.5
	61	---	---	---	---	---
222yu:						
Sites loam	0-6	15-27	4.00-14.00	0.14-0.17	0.0-2.9	2.0-10
	6-16	27-35	4.00-14.00	0.16-0.18	3.0-5.9	0.0-0.5
	16-51	35-60	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.5
	51-61	27-35	4.00-14.00	0.15-0.18	3.0-5.9	0.0-0.5
	61	---	---	---	---	---
225yu:						
Sites gravelly loam, bedrock substratum	0-5	15-27	4.00-14.00	0.12-0.15	0.0-2.9	2.0-10
	5-53	30-40	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.5
	53	---	---	---	---	---
226yu:						
Sites gravelly loam, bedrock substratum	0-5	15-27	4.00-14.00	0.12-0.15	0.0-2.9	2.0-10
	5-53	30-40	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.5
	53	---	---	---	---	---
227yu:						
Sites gravelly loam, bedrock substratum	0-5	15-27	4.00-14.00	0.12-0.15	0.0-2.9	2.0-10
	5-53	30-40	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.5
	53	---	---	---	---	---
242yu:						
Surnuf loam	0-12	18-27	4.00-14.00	0.15-0.18	0.0-2.9	1.0-3.0
	12-77	35-60	1.40-4.00	0.16-0.17	3.0-5.9	0.0-0.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
243yu:						
Surnuf loam	0-12	18-27	4.00-14.00	0.15-0.18	0.0-2.9	1.0-3.0
	12-77	35-60	1.40-4.00	0.16-0.17	3.0-5.9	0.0-0.5
244yu:						
Surnuf loam	0-12	18-27	4.00-14.00	0.15-0.18	0.0-2.9	1.0-3.0
	12-77	35-60	1.40-4.00	0.16-0.17	3.0-5.9	0.0-0.5
245:						
Surnuf loam	0-12	18-27	4.00-14.00	0.15-0.18	0.0-2.9	1.0-3.0
	12-77	35-60	1.40-4.00	0.16-0.17	3.0-5.9	0.0-0.5
248yu:						
Trainer loam	0-9	18-27	4.00-14.00	0.14-0.16	0.0-2.9	0.5-1.0
	9-36	18-27	4.00-14.00	0.12-0.15	0.0-2.9	0.0-0.5
	36-66	10-18	14.00-42.00	0.09-0.12	0.0-2.9	0.0-0.5
250:						
Llanoseco, occasionally flooded	0-8	27-35	2.00-4.00	0.19-0.21	3.0-6.0	1.0-3.0
	8-18	35-40	1.40-4.00	0.17-0.19	6.0-9.0	1.0-3.0
	18-28	40-50	0.90-1.40	0.16-0.17	7.0-10.5	1.0-3.0
	28-41	40-50	0.90-1.40	0.16-0.17	7.0-10.5	0.5-1.0
	41-57	40-60	0.42-1.40	0.14-0.17	7.0-13.5	0.5-1.0
	57-71	40-60	0.42-1.40	0.14-0.17	7.0-13.5	0.1-0.5
	71-83	40-60	0.90-1.40	0.16-0.17	7.0-13.5	0.1-0.5
	83-89	40-50	0.90-1.40	0.16-0.17	7.0-10.5	0.1-0.5
	89-93	---	0.00-0.01	---	---	---
252:						
Whitecabin silty clay, occasionally flooded	0-5	40-55	0.60-1.40	0.15-0.17	7.0-12.0	1.0-2.0
	5-13	45-55	0.60-1.20	0.15-0.17	9.5-12.0	0.1-0.9
	13-26	45-55	0.60-1.20	0.15-0.17	9.5-12.0	0.1-0.9
	26-35	45-55	0.60-1.20	0.15-0.17	9.5-15.0	0.1-0.9
	35-45	35-55	0.60-2.00	0.15-0.17	6.0-12.0	0.1-0.9
	45-53	35-55	0.60-2.00	0.15-0.17	6.0-12.0	0.1-0.9
	53-63	---	0.00-0.01	---	0.0-2.0	0.1-0.5
	63-72	---	0.00-0.01	---	0.0-2.0	0.1-0.5
Ordferry silty clay, occasionally flooded	0-3	40-50	0.90-1.40	0.15-0.17	6.0-9.0	1.0-2.0
	3-6	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0
	6-13	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.1-1.0
	13-25	40-60	0.42-1.40	0.14-0.17	9.0-15.0	0.1-1.0
	25-29	35-50	0.90-2.00	0.15-0.19	9.0-10.5	0.1-1.0
	29-33	---	0.00-0.01	---	0.0-2.0	---
	33-40	---	0.00-0.01	---	0.0-2.0	---
252yu:						
Woodleaf gravelly loam	0-9	18-27	4.00-14.00	0.14-0.16	3.0-5.9	2.0-3.0
	9-28	35-60	0.42-1.40	0.13-0.15	3.0-5.9	0.0-0.5
	28	---	---	---	---	---
253yu:						
Woodleaf gravelly loam	0-9	18-27	4.00-14.00	0.14-0.16	3.0-5.9	2.0-3.0
	9-28	35-60	0.42-1.40	0.13-0.15	3.0-5.9	0.0-0.5
	28	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
255:						
Whitecabin silty clay loam, occasionally flooded	0-8	27-40	1.40-4.00	0.17-0.21	3.0-9.0	1.0-2.0
	8-20	45-55	0.60-1.20	0.15-0.17	9.5-12.0	1.0-2.0
	20-44	45-55	0.60-1.20	0.15-0.17	9.5-15.0	0.1-0.9
	44-60	---	0.00-0.01	---	0.0-2.0	---
Ordferry silty clay, occasionally flooded	0-3	40-50	0.90-1.40	0.15-0.17	6.0-9.0	1.0-2.0
	3-6	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0
	6-13	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.1-1.0
	13-25	40-60	0.42-1.40	0.14-0.17	9.0-15.0	0.1-1.0
	25-29	35-50	0.90-2.00	0.15-0.19	9.0-10.5	0.1-1.0
	29-33	---	0.00-0.01	---	0.0-2.0	---
	33-40	---	0.00-0.01	---	0.0-2.0	---
256:						
Whitecabin silt loam, occasionally flooded	0-6	18-27	4.00-14.00	0.18-0.20	0.0-3.0	1.0-2.0
	6-13	45-55	0.60-1.20	0.14-0.16	9.5-12.0	1.0-2.0
	13-27	45-55	0.60-1.20	0.14-0.16	9.5-15.0	0.1-0.9
	27-42	45-55	0.60-1.20	0.14-0.16	9.5-12.0	0.1-0.9
	42-54	35-40	1.40-2.00	0.17-0.19	3.0-9.0	0.1-0.9
	54-62	---	0.00-0.01	---	---	---
257:						
Llanoseco, frequently flooded	0-8	27-35	2.00-4.00	0.19-0.21	3.0-6.0	1.0-3.0
	8-18	35-40	1.40-4.00	0.17-0.19	6.0-9.0	1.0-3.0
	18-28	40-50	0.90-1.40	0.16-0.17	7.0-10.5	1.0-3.0
	28-41	40-50	0.90-1.40	0.16-0.17	7.0-10.5	0.5-1.0
	41-57	40-60	0.42-1.40	0.14-0.17	7.0-13.5	0.5-1.0
	57-71	40-60	0.42-1.40	0.14-0.17	7.0-13.5	0.1-0.5
	71-83	40-60	0.90-1.40	0.16-0.17	7.0-13.5	0.1-0.5
	83-89	40-50	0.90-1.40	0.16-0.17	7.0-10.5	0.1-0.5
	89-93	---	0.00-0.01	---	---	---
258:						
Codora, occasionally flooded	0-6	27-35	2.00-4.00	0.19-0.21	3.0-6.0	1.0-3.0
	6-11	27-35	2.00-4.00	0.19-0.21	3.0-6.0	1.0-3.0
	11-22	35-40	1.40-2.00	0.17-0.19	6.0-9.0	1.0-3.0
	22-38	35-40	1.40-2.00	0.17-0.19	6.0-9.0	0.5-1.0
	38-60	27-45	1.20-4.00	0.15-0.21	3.0-9.5	0.5-1.0
260:						
Ordferry silty clay, occasionally flooded	0-3	40-50	0.90-1.40	0.15-0.17	6.0-9.0	1.0-2.0
	3-6	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0
	6-13	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.1-1.0
	13-25	40-60	0.42-1.40	0.14-0.17	9.0-15.0	0.1-1.0
	25-29	35-50	0.90-2.00	0.15-0.19	9.0-10.5	0.1-1.0
	29-33	---	0.00-0.01	---	0.0-2.0	---
	33-40	---	0.00-0.01	---	0.0-2.0	---
280:						
Columbia taxadjunct stratified very fine sandy loam	0-8	5-15	17.00-80.00	0.14-0.16	0.0-0.7	0.5-1.0
	8-10	5-15	17.00-80.00	0.14-0.16	0.0-0.7	0.5-1.0
	10-19	5-15	17.00-80.00	0.14-0.16	0.0-0.7	0.5-1.0
	19-30	5-15	17.00-80.00	0.14-0.16	0.0-0.7	0.5-1.0
	30-40	5-15	17.00-80.00	0.16-0.19	0.0-0.7	0.5-2.0
	40-60	5-15	17.00-80.00	0.16-0.19	0.0-0.7	0.5-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
290:						
Perkins gravelly loam--------	0-8	13-26	6.00-19.00	0.11-0.15	0.5-3.0	1.2-2.0
	8-24	20-35	2.00-12.00	0.07-0.18	1.0-6.0	0.5-0.9
	24-38	17-35	2.00-15.00	0.06-0.18	0.8-6.0	0.5-0.9
	38-48	12-20	12.00-20.00	0.05-0.07	0.6-1.0	0.0-0.5
	48-73	10-20	12.00-30.00	0.05-0.11	0.5-1.0	0.0-0.5
300:						
Redsluff gravelly loam-------	0-2	16-24	5.00-9.00	0.11-0.18	1.0-3.0	1.6-5.0
	2-5	20-35	2.00-7.00	0.08-0.17	2.0-6.0	0.5-3.0
	5-12	20-35	2.00-7.00	0.08-0.17	2.0-6.0	0.5-3.0
	12-21	20-35	2.00-7.00	0.08-0.17	2.0-6.0	0.5-3.0
	21-29	20-35	2.00-7.00	0.08-0.17	2.0-6.0	0.5-3.0
	29-37	10-20	7.00-28.00	0.02-0.13	0.5-2.0	0.1-0.5
	37-42	10-20	7.00-28.00	0.02-0.13	0.5-2.0	0.1-0.5
	42-80	1-8	30.00-141.00	0.01-0.08	0.1-0.2	0.1-0.5
301:						
Wafap gravelly loam----------	0-1	16-26	1.40-9.00	0.09-0.16	2.0-3.0	2.0-5.0
	1-5	22-35	1.40-5.00	0.08-0.19	2.0-6.0	1.0-3.0
	5-13	30-45	0.42-3.00	0.02-0.17	4.5-9.0	1.0-3.0
	13-32	30-45	0.42-3.00	0.02-0.17	4.5-9.0	0.2-1.0
	32-39	30-45	0.42-3.00	0.02-0.17	4.5-9.0	0.2-1.0
	39-46	20-40	1.00-4.00	0.02-0.12	1.0-7.5	0.1-0.3
	46	---	0.01-0.42	---	---	---
Hamslough clay---------------	0-3	40-60	0.42-1.40	0.10-0.15	9.0-13.5	2.0-5.0
	3-14	40-60	0.42-1.40	0.10-0.15	9.0-13.5	2.0-5.0
	14-19	40-60	0.42-1.40	0.05-0.14	9.0-13.5	0.5-2.0
	19-27	30-60	0.42-2.00	0.03-0.14	4.5-13.5	0.5-2.0
	27	---	0.01-0.42	---	---	---
302:						
Redtough loam----------	0-1	15-22	6.00-10.00	0.10-0.17	1.0-2.0	1.0-4.0
	1-7	18-27	4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0
	7-13	18-27	4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0
	13	---	0.00-0.01	---	---	---
Redswale cobbly loam---------	0-1	15-22	6.00-10.00	0.08-0.16	1.0-2.0	2.0-5.0
	1-7	18-27	4.00-9.00	0.08-0.14	1.0-3.0	0.5-2.0
	7	---	0.00-0.01	---	---	---
303:						
Munjar gravelly loam---------	0-2	20-24	10.00-13.00	0.11-0.15	1.0-3.0	2.0-5.0
	2-5	23-24	10.00-11.00	0.11-0.15	2.0-3.0	0.8-1.2
	5-9	24-35	2.00-10.00	0.03-0.18	2.0-6.0	0.5-0.8
	9-16	24-35	2.00-10.00	0.03-0.18	2.0-6.0	0.5-0.8
	16-22	24-35	2.00-10.00	0.03-0.18	2.0-6.0	0.5-0.8
	22-31	35-40	1.40-2.00	0.05-0.11	6.0-9.0	0.0-0.5
	31-46	27-35	0.00-0.01	---	3.0-6.0	---
Tuscan taxadjunct gravelly clay loam-------------------	0-2	18-30	2.50-14.00	0.10-0.19	0.9-6.0	2.0-5.0
	2-5	25-46	1.20-8.00	0.10-0.19	2.0-9.0	0.8-1.2
	5-13	35-46	1.20-2.00	0.10-0.17	6.0-9.0	0.5-0.8
	13-23	35-46	1.20-2.00	0.10-0.17	6.0-9.0	0.5-0.8
	23-29	35-46	1.20-2.00	0.03-0.16	6.0-9.0	0.0-0.5
	29	---	0.00-0.01	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
303:						
Galt clay	0-3	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0
	3-13	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0
	13-29	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	29-32	37-60	0.42-2.20	0.14-0.18	6.5-13.5	0.2-0.8
	32-39	---	0.00-0.01	---	---	---
304:						
Redtough loam	0-1	15-22	6.00-10.00	0.10-0.17	1.0-2.0	1.0-4.0
	1-7	18-27	4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0
	7-13	18-27	4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0
	13	---	0.00-0.01	---	---	---
305:						
Redtough gravelly loam	0-2	15-22	6.00-14.00	0.10-0.17	1.0-2.0	1.0-4.0
	2-5	18-27	4.00-10.00	0.10-0.17	1.0-4.0	0.5-1.0
	5-8	18-27	4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0
	8-15	18-30	4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0
	15	---	0.00-0.01	---	---	---
Redswale loam	0-1	15-22	6.00-14.00	0.08-0.16	1.0-2.0	2.0-5.0
	1-5	18-27	4.00-12.00	0.08-0.14	1.0-3.0	0.5-2.0
	5	---	0.00-0.01	---	---	---
Anita, gravelly duripan	0-3	40-60	0.42-1.40	0.10-0.15	9.0-13.5	2.0-5.0
	3-8	40-60	0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0
	8-15	40-60	0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0
	15	---	0.00-0.01	---	---	---
306:						
Duric Xerarents, fill	0-8	18-27	4.00-14.00	0.08-0.18	0.9-3.0	0.0-2.0
	8-14	18-35	2.00-14.00	0.13-0.18	0.9-6.0	0.0-2.0
	14-20	18-35	2.00-14.00	0.13-0.18	0.9-6.0	0.0-2.0
	20-36	10-27	4.00-30.00	0.11-0.18	0.5-3.0	0.0-2.0
	36-40	40-55	0.60-1.40	0.10-0.16	7.3-9.0	0.0-2.0
	40	---	0.00-0.01	---	---	---
Duric Xerarents, cut	0-13	10-30	2.50-30.00	0.10-0.21	0.5-4.2	0.0-2.0
	13-15	12-50	0.90-20.00	0.10-0.21	0.6-9.0	0.0-2.0
	15	---	0.00-0.01	---	---	---
307:						
Duric Xerarents clay loam, leveled	0-2	18-40	1.40-14.00	0.14-0.21	0.9-7.5	0.0-2.0
	2-12	30-55	0.60-3.00	0.15-0.21	4.2-9.0	0.0-2.0
	12	---	0.00-0.01	---	---	---
310:						
Kimball loam	0-2	10-25	8.00-30.00	0.12-0.17	0.5-3.0	1.2-3.0
	2-4	10-25	8.00-30.00	0.12-0.17	0.5-3.0	1.2-3.0
	4-6	10-25	8.00-30.00	0.12-0.17	0.5-3.0	0.5-0.9
	6-10	10-25	8.00-30.00	0.12-0.17	0.5-3.0	0.5-0.9
	10-17	24-30	3.00-10.00	0.15-0.21	2.0-4.0	0.0-0.5
	17-34	40-50	0.90-1.40	0.14-0.17	6.0-9.0	0.0-0.5
	34-46	30-40	1.40-2.50	0.13-0.21	4.0-7.3	0.0-0.5
	46-64	27-35	2.00-2.50	0.12-0.16	3.0-6.0	0.0-0.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
317:						
Thompsonflat loam----------	0-2	12-22	12.00-20.00	0.09-0.17	0.0-2.0	0.5-1.2
	2-5	18-38	1.60-14.00	0.11-0.18	0.9-7.0	0.1-0.5
	5-12	18-38	1.60-14.00	0.09-0.17	0.9-7.0	0.1-0.5
	12-19	18-38	1.60-14.00	0.11-0.17	0.9-7.0	0.1-0.5
	19-29	18-38	1.60-14.00	0.11-0.17	0.9-7.0	0.1-0.5
	29-35	38-55	0.60-1.60	0.05-0.16	6.0-9.0	0.1-0.5
	35-43	5-38	1.40-4.00	0.02-0.17	0.0-7.0	0.0-0.3
	43-80	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3
318:						
Thompsonflat fine sandy loam	0-3	12-22	12.00-20.00	0.09-0.17	0.6-1.6	0.5-1.2
	3-7	18-38	1.60-14.00	0.11-0.18	0.9-7.0	0.1-0.5
	7-11	18-38	1.60-14.00	0.09-0.17	0.9-7.0	0.1-0.5
	11-15	18-38	1.60-14.00	0.11-0.17	0.9-7.0	0.1-0.5
	15-22	38-55	0.60-1.60	0.05-0.16	6.0-9.0	0.1-0.5
	22-35	5-38	1.40-4.00	0.02-0.17	0.0-7.0	0.0-0.3
	35-45	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3
	45-53	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3
	53-66	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3
	66-80	5-38	1.40-4.00	0.01-0.11	0.0-7.0	0.0-0.3
Oroville gravelly fine sandy loam------------------------	0-2	15-24	10.00-17.00	0.10-0.14	0.7-2.5	0.5-2.0
	2-6	18-25	8.00-14.00	0.10-0.17	0.9-2.5	0.2-0.8
	6-13	22-35	2.00-12.00	0.08-0.20	1.5-6.0	0.1-0.5
	13-17	45-52	0.80-1.00	0.07-0.16	6.0-9.0	0.1-0.3
	17-23	45-52	0.80-1.00	0.07-0.16	6.0-9.0	0.0-0.3
	23-31	---	0.00-0.01	---	---	---
	31-60	---	0.00-0.01	---	---	---
320:						
Vistarobles sandy loam-------	0-5	16-26	4.00-16.00	0.09-0.18	0.8-3.0	1.0-2.0
	5-10	16-26	4.00-16.00	0.09-0.18	0.8-3.0	1.0-2.0
	10-14	40-50	0.80-1.40	0.10-0.16	7.0-9.0	0.4-1.0
	14-34	3-10	0.00-0.01	0.02-0.08	0.0-1.0	0.0-0.2
	34-40	3-15	17.00-100.00	0.02-0.12	0.0-1.0	0.0-0.2
Redding loam-----------------	0-4	12-26	6.00-20.00	0.10-0.17	0.5-3.0	1.0-2.0
	4-11	12-26	6.00-20.00	0.10-0.17	0.5-3.0	0.2-1.0
	11-24	15-26	6.00-17.00	0.08-0.18	0.5-3.0	0.1-0.5
	24-35	40-50	0.80-1.40	0.10-0.16	7.0-9.0	0.5-1.0
	35-40	---	0.00-0.01	---	---	0.0-0.2
321:						
Durixeralfs, fine-loamy, gravelly fine sandy loam----	0-1	12-15	17.00-20.00	0.09-0.15	0.5-1.0	0.0-1.0
	1-5	15-30	3.00-17.00	0.08-0.19	0.5-4.0	0.0-0.8
	5-10	15-30	3.00-17.00	0.08-0.19	0.5-4.0	0.0-0.6
	10-18	15-30	3.00-17.00	0.08-0.19	0.5-4.0	0.0-0.5
	18-24	28-35	2.00-4.00	0.06-0.21	3.5-6.0	0.0-0.5
	24-27	35-50	0.90-2.00	0.05-0.16	6.0-9.0	0.0-0.2
	---	---	0.00-0.01	---	---	---
Durixeralfs, loamy-skeletal, gravelly fine sandy loam----	0-1	10-26	6.00-30.00	0.11-0.16	0.5-3.0	0.0-1.0
	1-4	18-30	3.00-14.00	0.06-0.18	0.9-4.0	0.0-0.8
	4-9	28-38	1.40-3.00	0.07-0.17	4.0-7.0	0.0-0.5
	9	---	0.00-0.01	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
321:						
Typic Petraquepts silty clay	0-3	38-50	0.90-1.60	0.14-0.18	6.0-10.5	0.0-1.0
	3-11	42-55	0.70-1.40	0.10-0.15	8.0-12.0	0.0-0.8
	11	---	0.00-0.01	---	---	---
330:						
Wilsoncreek loam, occasionally flooded--------	0-7	13-18	14.00-19.00	0.15-0.17	0.5-1.0	2.0-3.0
	7-14	13-27	4.00-19.00	0.15-0.17	0.5-3.0	1.0-3.0
	14-25	13-27	4.00-19.00	0.15-0.17	0.5-3.0	1.0-3.0
	25-34	18-27	4.00-14.00	0.16-0.20	0.9-3.0	1.0-3.0
	34-44	18-27	4.00-14.00	0.16-0.20	0.9-3.0	0.5-1.0
	44-60	15-27	4.00-14.00	0.16-0.20	0.7-3.0	0.5-1.0
Trainer loam, occasionally flooded----------	0-7	18-27	4.00-14.00	0.14-0.18	0.9-3.0	0.5-1.0
	7-13	18-27	4.00-14.00	0.14-0.18	0.9-3.0	0.5-1.0
	13-26	18-27	4.00-14.00	0.12-0.18	0.9-3.0	0.0-0.5
	26-36	18-27	4.00-14.00	0.12-0.18	0.9-3.0	0.0-0.5
	36-46	10-18	14.00-42.00	0.09-0.17	0.5-1.0	0.0-0.5
	46-61	10-18	14.00-42.00	0.09-0.17	0.5-1.0	0.0-0.5
331:						
Thompsonflat loam----------	0-2	12-22	12.00-20.00	0.09-0.17	0.0-2.0	0.5-1.2
	2-5	18-38	1.60-14.00	0.11-0.18	0.9-7.0	0.1-0.5
	5-12	18-38	1.60-14.00	0.09-0.17	0.9-7.0	0.1-0.5
	12-19	18-38	1.60-14.00	0.11-0.17	0.9-7.0	0.1-0.5
	19-29	18-38	1.60-14.00	0.11-0.17	0.9-7.0	0.1-0.5
	29-35	38-55	0.60-1.60	0.05-0.16	6.0-9.0	0.1-0.5
	35-43	5-38	1.40-4.00	0.02-0.17	0.0-7.0	0.0-0.3
	43-80	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3
335:						
Galt clay loam----------	0-6	30-40	1.40-2.50	0.17-0.20	4.0-9.0	1.0-2.0
	6-20	30-60	0.42-2.50	0.14-0.20	4.0-13.5	1.0-2.0
	20-27	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	27-30	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	30	---	0.00-0.01	---	---	---
336:						
Galt clay----------	0-3	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0
	3-13	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.0
	13-29	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	29-32	37-60	0.42-2.20	0.14-0.18	9.0-13.5	0.2-0.8
	32-39	---	0.00-0.01	---	---	---
337:						
Galt clay loam----------	0-6	30-40	1.40-2.50	0.17-0.20	4.0-9.0	1.0-2.0
	6-20	30-60	0.42-2.50	0.14-0.20	4.0-13.5	1.0-2.0
	20-27	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	27-30	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.2-0.8
	30	---	0.00-0.01	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
338:						
Oxyaquic Xerofluvents silt loam	0-6	15-20	12.00-17.00	0.17-0.20	0.7-1.0	0.5-2.0
	6-20	15-20	12.00-17.00	0.17-0.20	0.7-1.0	0.0-0.5
	20-32	5-10	30.00-80.00	0.07-0.08	0.0-1.0	0.0-0.5
	32-36	5-10	30.00-80.00	0.09-0.11	0.0-1.0	0.0-0.5
	36-46	5-5	80.00-80.00	0.05-0.05	0.0-1.0	0.0-0.5
	46-50	15-20	12.00-17.00	0.17-0.20	0.7-1.0	0.0-0.5
	50-55	5-10	30.00-80.00	0.09-0.11	0.0-1.0	0.0-0.5
	55-60	15-20	12.00-17.00	0.17-0.20	0.9-1.0	0.0-0.5
339:						
Oxyaquic Xerofluvents sandy loam, frequently flooded	0-8	10-17	15.00-30.00	0.12-0.13	0.5-1.0	0.5-2.0
	8-12	5-17	15.00-80.00	0.11-0.13	0.2-1.0	0.0-0.5
	12-16	5-17	15.00-80.00	0.13-0.15	0.2-1.0	0.0-0.5
	16-60	5-17	15.00-80.00	0.06-0.13	0.2-1.0	0.0-0.5
340:						
Rock outcrop, Lovejoy basalt.						
Thermalrocks very gravelly loam	0-1	14-18	8.00-10.00	0.05-0.14	0.0-2.9	4.0-8.0
	1-5	18-28	4.00-8.00	0.02-0.12	0.0-2.9	1.5-5.0
	5	---	---	---	---	---
Campbellhills gravelly loam	0-2	15-22	6.00-10.00	0.10-0.15	0.0-2.9	4.0-8.0
	2-7	18-27	4.00-9.00	0.08-0.15	0.0-2.9	3.0-6.0
	7-17	25-40	1.40-5.00	0.07-0.14	0.0-7.0	0.3-2.0
	17-29	25-40	1.40-5.00	0.07-0.14	0.0-7.0	0.3-2.0
	29-39	25-40	1.40-5.00	0.03-0.09	0.0-7.0	0.3-2.0
	39-50	25-40	1.40-5.00	0.03-0.09	0.0-7.0	0.3-2.0
	50	---	---	---	---	---
341:						
Elsey loam	0-3	15-22	6.00-10.00	0.12-0.16	0.0-2.9	4.0-8.0
	3-8	18-24	5.00-9.00	0.11-0.17	0.0-2.9	3.0-6.0
	8-17	19-27	4.00-9.00	0.11-0.16	0.0-5.9	1.0-3.0
	17-25	19-27	4.00-9.00	0.11-0.16	0.0-5.9	1.0-3.0
	25-32	25-33	2.70-5.00	0.07-0.18	3.0-5.9	0.2-1.0
	32-38	25-33	2.70-5.00	0.07-0.18	3.0-5.9	0.2-1.0
	38	---	---	---	---	---
Beatsonhollow gravelly loam	0-3	14-22	6.00-10.00	0.10-0.14	0.0-2.9	4.0-8.0
	3-10	14-22	6.00-10.00	0.10-0.14	0.0-2.9	4.0-8.0
	10-17	20-28	3.00-7.00	0.05-0.14	0.0-2.9	1.5-2.0
	17	---	---	---	---	---
Campbellhills gravelly loam	0-2	15-22	6.00-10.00	0.10-0.15	0.0-2.9	4.0-8.0
	2-7	18-27	4.00-9.00	0.08-0.15	0.0-2.9	3.0-6.0
	7-17	25-40	1.40-5.00	0.07-0.14	0.0-7.0	0.3-2.0
	17-29	25-40	1.40-5.00	0.07-0.14	0.0-7.0	0.3-2.0
	29-39	25-40	1.40-5.00	0.03-0.09	0.0-7.0	0.3-2.0
	39-50	25-40	1.40-5.00	0.03-0.09	0.0-7.0	0.3-2.0
	50	---	---	---	---	---
Rock outcrop, Lovejoy basalt.						

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
342:						
Thermalrocks very gravelly loam	0-1	14-18	8.00-10.00	0.05-0.14	0.0-2.9	4.0-8.0
	1-5	18-28	4.00-8.00	0.02-0.12	0.0-2.9	1.5-5.0
	5	---	---	---	---	---
Beatsonhollow taxadjunct fine sandy loam	0-1	15-18	14.00-17.00	0.11-0.15	0.0-3.0	4.0-8.0
	1-6	18-27	4.00-14.00	0.10-0.17	0.0-3.0	1.5-5.0
	6-10	18-27	4.00-14.00	0.10-0.17	0.0-3.0	1.5-5.0
	10-15	18-27	4.00-14.00	0.10-0.17	0.0-3.0	1.5-5.0
	15-18	18-27	4.00-14.00	0.10-0.17	0.0-3.0	1.5-5.0
	18	---	---	---	---	---
Rock outcrop, Lovejoy basalt.						
343:						
Coalcanyon very cobbly loam	0-2	14-18	8.00-10.00	0.06-0.14	0.0-2.9	8.0-15
	2-11	16-22	6.00-9.00	0.06-0.11	0.0-2.9	4.0-8.0
	11-27	22-35	2.00-6.00	0.05-0.14	0.0-5.9	0.5-3.0
	27-43	22-35	2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0
	43-65	22-35	2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0
Coonhollow gravelly loam	0-3	16-22	6.00-9.00	0.08-0.16	0.0-2.9	8.0-15
	3-11	18-22	6.00-8.00	0.08-0.16	0.0-2.9	4.0-8.0
	11-22	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	22-32	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	32-45	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	45-50	---	---	---	---	---
	50	---	---	---	---	---
344:						
Coalcanyon very cobbly loam	0-2	14-18	8.00-10.00	0.06-0.14	0.0-2.9	8.0-15
	2-11	16-22	6.00-9.00	0.06-0.11	0.0-2.9	4.0-8.0
	11-27	22-35	2.00-6.00	0.05-0.14	0.0-5.9	0.5-3.0
	27-43	22-35	2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0
	43-65	22-35	2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0
Coonhollow gravelly loam	0-3	16-22	6.00-9.00	0.08-0.16	0.0-2.9	8.0-15
	3-11	18-22	6.00-8.00	0.08-0.16	0.0-2.9	4.0-8.0
	11-22	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	22-32	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	32-45	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	45-50	---	---	---	---	---
	50	---	---	---	---	---
Rock outcrop, Lovejoy basalt.						
346:						
Cherotable loam	0-2	18-24	5.00-8.00	0.11-0.17	0.0-2.9	7.0-12
	2-8	18-35	2.00-8.00	0.10-0.21	0.0-5.9	1.0-3.0
	8-14	18-35	2.00-8.00	0.10-0.21	0.0-5.9	1.0-3.0
	14-21	18-35	2.00-8.00	0.10-0.21	0.0-5.9	1.0-3.0
	21-30	18-35	2.00-8.00	0.10-0.21	0.0-5.9	1.0-3.0
	30-45	35-50	0.50-2.00	0.06-0.16	5.8-11.0	0.5-2.0
	45	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
346:						
Elsey loam	0-3	15-22	6.00-10.00	0.12-0.16	0.0-2.9	4.0-8.0
	3-8	18-24	5.00-9.00	0.11-0.17	0.0-2.9	3.0-6.0
	8-17	19-27	4.00-9.00	0.11-0.16	0.0-5.9	1.0-3.0
	17-25	19-27	4.00-9.00	0.11-0.16	0.0-5.9	1.0-3.0
	25-32	25-33	2.70-5.00	0.07-0.18	3.0-5.9	0.2-1.0
	32-38	25-33	2.70-5.00	0.07-0.18	3.0-5.9	0.2-1.0
	38	---	---	---	---	---
347:						
Haplic Palexeralfs loam	0-3	15-18	14.00-17.00	0.09-0.14	0.7-1.0	2.0-4.0
	3-9	22-30	3.00-12.00	0.03-0.14	1.0-4.0	0.5-2.0
	9-22	22-30	3.00-12.00	0.03-0.11	1.0-4.2	0.5-2.0
	22-31	25-40	1.40-8.00	0.03-0.09	2.6-7.0	0.5-1.0
	31-45	25-40	1.40-8.00	0.03-0.09	2.6-7.0	0.5-1.0
	45-52	25-40	1.40-8.00	0.03-0.09	2.6-7.0	0.5-1.0
	52-64	40-50	0.90-1.40	0.03-0.09	7.0-9.0	0.2-0.8
353:						
Cherokeespring gravelly silt loam	0-3	15-20	6.00-8.00	0.14-0.17	0.0-2.9	8.0-15
	3-7	20-30	3.00-6.00	0.11-0.19	0.0-5.9	3.0-8.0
	7-16	20-30	3.00-6.00	0.11-0.19	0.0-5.9	3.0-8.0
	16-30	28-35	2.00-4.00	0.12-0.19	3.5-5.9	0.5-3.0
	30-42	28-35	2.00-4.00	0.12-0.19	3.5-5.9	0.5-3.0
	42-60	35-42	1.30-2.00	0.07-0.16	5.8-8.0	0.2-1.0
	60-68	35-42	1.30-2.00	0.07-0.16	5.8-8.0	0.2-1.0
355:						
Coalcanyon very cobbly loam	0-2	14-18	8.00-10.00	0.06-0.14	0.0-2.9	8.0-15
	2-11	16-22	6.00-9.00	0.06-0.11	0.0-2.9	4.0-8.0
	11-27	22-35	2.00-6.00	0.05-0.14	0.0-5.9	0.5-3.0
	27-43	22-35	2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0
	43-65	22-35	2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0
Talus.						
356:						
Coalcanyon very cobbly loam	0-2	14-18	8.00-10.00	0.06-0.14	0.0-2.9	8.0-15
	2-11	16-22	6.00-9.00	0.06-0.11	0.0-2.9	4.0-8.0
	11-27	22-35	2.00-6.00	0.05-0.14	0.0-5.9	0.5-3.0
	27-43	22-35	2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0
	43-65	22-35	2.00-6.00	0.03-0.14	0.0-5.9	0.5-3.0
Rock outcrop, basalt cliffs.						
Talus.						
Coonhollow gravelly loam	0-3	16-22	6.00-9.00	0.08-0.16	0.0-2.9	8.0-15
	3-11	18-22	6.00-8.00	0.08-0.16	0.0-2.9	4.0-8.0
	11-22	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	22-32	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	32-45	18-38	2.00-8.00	0.03-0.19	0.0-7.0	0.5-3.0
	45-50	---	---	---	---	---
	50	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
360:						
Typic Xerofluvents, coarse-loamy	0-3	6-18	14.00-60.00	0.05-0.15	0.0-1.0	0.0-0.5
	3-11	1-32	4.00-141.00	0.02-0.20	0.0-2.9	0.0-0.2
	11-20	1-32	4.00-141.00	0.02-0.20	0.0-2.9	0.0-0.2
	20-24	1-32	4.00-141.00	0.02-0.20	0.0-2.9	0.0-0.2
	24-31	1-32	4.00-141.00	0.02-0.20	0.0-2.9	0.0-0.2
	31-45	1-32	4.00-141.00	0.02-0.20	0.0-2.9	0.0-0.2
	45-51	1-32	4.00-141.00	0.01-0.20	0.0-2.9	0.0-0.2
	51-66	1-32	4.00-141.00	0.01-0.20	0.0-2.9	0.0-0.2
	66-84	1-32	4.00-141.00	0.01-0.20	0.0-2.9	0.0-0.2
	84-95	1-32	4.00-141.00	0.01-0.20	0.0-2.9	0.0-0.2
Typic Xerofluvents, sandy-skeletal	0-3	5-18	14.00-80.00	0.04-0.14	0.0-1.0	0.0-0.5
	3-9	1-18	14.00-141.00	0.01-0.12	0.0-1.0	0.0-0.2
	9-16	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	16-22	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	22-30	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	30-40	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	40-50	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	50-98	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
361:						
Typic Xerofluvents, sandy-skeletal	0-3	5-18	14.00-80.00	0.04-0.14	0.0-1.0	0.0-0.5
	3-9	1-18	14.00-141.00	0.01-0.12	0.0-1.0	0.0-0.2
	9-16	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	16-22	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	22-30	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	30-40	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	40-50	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
	50-98	1-5	80.00-141.00	0.01-0.03	0.0-0.5	0.0-0.2
362:						
Ultic Haploxeralfs, sandstone, low elevation, very deep	0-2	14-20	10.00-21.00	0.11-0.17	0.0-1.0	1.0-6.0
	2-8	20-35	1.40-4.00	0.11-0.21	1.0-6.0	0.5-1.0
	8-18	20-35	1.40-4.00	0.11-0.21	1.0-6.0	0.5-1.0
	18-28	25-40	1.00-3.50	0.11-0.21	3.0-7.5	0.1-0.5
	28-39	25-40	1.00-3.50	0.11-0.21	3.0-7.5	0.1-0.5
	39-49	25-35	1.40-5.00	0.12-0.21	3.0-6.0	0.1-0.3
	49-56	12-22	3.80-26.00	0.11-0.18	0.0-1.0	0.1-0.2
	56-70	12-22	3.80-26.00	0.11-0.18	0.0-1.0	0.1-0.2
Ultic Haploxeralfs, sandstone, low elevation, deep	0-3	14-20	10.00-21.00	0.11-0.17	0.0-1.0	1.0-6.0
	3-8	20-30	2.00-8.00	0.12-0.18	1.0-4.5	0.5-1.0
	8-15	20-30	2.00-8.00	0.12-0.18	1.0-4.5	0.5-1.0
	15-24	10-30	2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5
	24-32	10-30	2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5
	32-41	10-30	2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5
	41	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
363:						
Ultic Haploxeralfs, sandstone, low elevation, very deep	0-2	14-20	10.00-21.00	0.11-0.17	0.0-1.0	1.0-6.0
	2-8	20-35	1.40-4.00	0.11-0.21	1.0-6.0	0.5-1.0
	8-18	20-35	1.40-4.00	0.11-0.21	1.0-6.0	0.5-1.0
	18-28	25-40	1.00-3.50	0.11-0.21	3.0-7.5	0.1-0.5
	28-39	25-40	1.00-3.50	0.11-0.21	3.0-7.5	0.1-0.5
	39-49	25-35	1.40-5.00	0.12-0.21	3.0-6.0	0.1-0.3
	49-56	12-22	3.80-26.00	0.11-0.18	0.0-1.0	0.1-0.2
	56-70	12-22	3.80-26.00	0.11-0.18	0.0-1.0	0.1-0.2
Ultic Haploxeralfs, sandstone, low elevation, deep	0-3	14-20	10.00-21.00	0.11-0.17	0.0-1.0	1.0-6.0
	3-8	20-30	2.00-8.00	0.12-0.18	1.0-4.5	0.5-1.0
	8-15	20-30	2.00-8.00	0.12-0.18	1.0-4.5	0.5-1.0
	15-24	10-30	2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5
	24-32	10-30	2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5
	32-41	10-30	2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5
	41	---	---	---	---	---
364:						
Ultic Haploxeralfs, sandstone, low elevation, deep	0-3	14-20	10.00-21.00	0.11-0.17	0.0-1.0	1.0-6.0
	3-8	20-30	2.00-8.00	0.12-0.18	1.0-4.5	0.5-1.0
	8-15	20-30	2.00-8.00	0.12-0.18	1.0-4.5	0.5-1.0
	15-24	10-30	2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5
	24-32	10-30	2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5
	32-41	10-30	2.00-28.00	0.12-0.18	0.0-4.5	0.1-0.5
	41	---	---	---	---	---
Ultic Haploxeralfs, sandstone, low elevation, very deep	0-2	14-20	10.00-21.00	0.11-0.17	0.0-1.0	1.0-6.0
	2-8	20-35	1.40-4.00	0.11-0.21	1.0-6.0	0.5-1.0
	8-18	20-35	1.40-4.00	0.11-0.21	1.0-6.0	0.5-1.0
	18-28	25-40	1.00-3.50	0.11-0.21	3.0-7.5	0.1-0.5
	28-39	25-40	1.00-3.50	0.11-0.21	3.0-7.5	0.1-0.5
	39-49	25-35	1.40-5.00	0.12-0.21	3.0-6.0	0.1-0.3
	49-56	12-22	3.80-26.00	0.11-0.18	0.0-1.0	0.1-0.2
	56-70	12-22	3.80-26.00	0.11-0.18	0.0-1.0	0.1-0.2
365:						
Palexerults gravelly loam	0-2	16-24	5.00-9.00	0.11-0.19	0.0-2.0	0.8-6.0
	2-12	20-35	2.00-8.00	0.11-0.21	1.0-6.0	0.5-1.0
	12-20	20-35	2.00-8.00	0.11-0.21	1.0-6.0	0.5-1.0
	20-29	35-60	0.42-2.00	0.10-0.19	6.0-9.0	0.1-0.5
	29-46	30-60	0.42-3.00	0.10-0.19	4.5-9.0	0.1-0.3
	46-65	40-60	0.42-1.40	0.13-0.17	4.5-9.0	0.1-0.3
	65	---	0.01-0.42	---	---	---
366:						
Palexerults gravelly loam	0-2	16-24	5.00-9.00	0.11-0.19	0.0-2.0	0.8-6.0
	2-12	20-35	2.00-8.00	0.11-0.21	1.0-6.0	0.5-1.0
	12-20	20-35	2.00-8.00	0.11-0.21	1.0-6.0	0.5-1.0
	20-29	35-60	0.42-2.00	0.10-0.19	6.0-9.0	0.1-0.5
	29-46	30-60	0.42-3.00	0.10-0.19	4.5-9.0	0.1-0.3
	46-65	40-60	0.42-1.40	0.13-0.17	4.5-9.0	0.1-0.3
	65	---	0.01-0.42	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
370:						
Palexerults gravelly loam----	0-2	16-24	5.00-9.00	0.11-0.19	0.0-2.0	0.8-6.0
	2-12	20-35	2.00-8.00	0.11-0.21	1.0-6.0	0.5-1.0
	12-20	20-35	2.00-8.00	0.11-0.21	1.0-6.0	0.5-1.0
	20-29	35-60	0.42-2.00	0.10-0.19	6.0-9.0	0.1-0.5
	29-46	30-60	0.42-3.00	0.10-0.19	4.5-9.0	0.1-0.3
	46-65	40-60	0.42-1.40	0.13-0.17	4.5-9.0	0.1-0.3
	65	---	0.01-0.42	---	---	---
375:						
Wickscorner loam----------	0-2	15-20	8.00-16.00	0.14-0.17	0.7-1.0	2.0-6.0
	2-8	20-33	2.00-8.00	0.10-0.19	1.0-5.0	0.5-2.0
	8-22	20-33	2.00-8.00	0.10-0.19	1.0-5.0	0.5-2.0
	22-38	28-45	1.00-4.00	0.06-0.17	3.5-8.9	0.5-1.0
	38-59	28-45	1.00-4.00	0.06-0.17	3.5-8.9	0.5-1.0
	59-72	35-55	0.45-2.00	0.03-0.12	6.0-9.0	0.2-0.8
	72-84	35-55	0.45-2.00	0.03-0.12	6.0-9.0	0.2-0.8
376:						
Flagcanyon gravelly loam-----	0-3	15-22	6.00-16.00	0.11-0.17	0.9-1.0	4.0-8.0
	3-9	22-30	3.00-6.00	0.07-0.14	1.0-4.5	1.0-4.0
	9-14	22-30	3.00-6.00	0.03-0.14	1.0-4.5	1.0-4.0
	14-30	30-50	0.50-3.00	0.03-0.13	4.0-9.0	1.0-2.0
	30-53	22-50	0.01-0.10	---	1.0-9.0	0.2-1.0
	53-65	22-50	0.01-0.10	---	1.0-9.0	0.2-1.0
Wickscorner loam----------	0-2	15-20	8.00-16.00	0.14-0.17	0.7-1.0	2.0-6.0
	2-8	20-33	2.00-8.00	0.10-0.19	1.0-5.0	0.5-2.0
	8-22	20-33	2.00-8.00	0.10-0.19	1.0-5.0	0.5-2.0
	22-38	28-45	1.00-4.00	0.06-0.17	3.5-8.9	0.5-1.0
	38-59	28-45	1.00-4.00	0.06-0.17	3.5-8.9	0.5-1.0
	59-72	35-55	0.45-2.00	0.03-0.12	6.0-9.0	0.2-0.8
	72-84	35-55	0.45-2.00	0.03-0.12	6.0-9.0	0.2-0.8
377:						
Flagcanyon taxadjunct fine sandy loam------------------	0-3	15-18	14.00-17.00	0.12-0.15	0.7-1.0	0.5-1.5
	3-7	24-32	2.50-10.00	0.12-0.20	2.0-5.0	0.5-1.0
	7-16	24-32	2.50-10.00	0.12-0.20	2.0-5.0	0.1-0.8
	16-23	35-50	0.90-2.00	0.06-0.12	6.0-9.0	0.1-0.5
	23-31	35-50	0.90-2.00	0.06-0.12	6.0-9.0	0.1-0.5
	31-63	2-5	0.42-1.40	0.01-0.02	0.0-0.2	0.0-0.2
Durixeralfs, clayey-skeletal, loam------------------------	0-1	18-25	8.00-14.00	0.10-0.18	0.9-3.0	0.0-1.0
	1-4	24-30	2.50-10.00	0.11-0.21	2.0-4.5	0.0-0.8
	4-9	40-50	0.90-1.40	0.03-0.10	7.0-9.0	0.0-0.6
	9-15	40-50	0.90-1.40	0.03-0.10	7.0-9.0	0.0-0.5
	15-60	5-50	0.42-1.40	0.02-0.14	0.0-9.0	0.0-0.2
Duraquerts gravelly clay-----	0-3	40-50	0.90-1.40	0.12-0.16	7.3-10.5	1.0-2.0
	3-6	40-50	0.90-1.40	0.12-0.16	7.3-10.5	0.2-0.8
	6-15	45-55	0.70-1.20	0.13-0.16	9.0-12.0	0.2-0.5
	15-21	45-55	0.70-1.20	0.13-0.16	9.0-12.0	0.2-0.3
	21-23	50-55	0.70-0.90	0.06-0.12	10.0-12.0	0.1-0.2
	23-60	5-10	0.42-1.40	---	0.0-0.5	0.1-0.2

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
400:						
Subaco taxadjunct clay-------	0-8	45-55	0.42-1.40	0.15-0.16	10.0-13.0	1.0-3.0
	8-16	50-60	0.42-1.40	0.14-0.16	10.5-13.5	1.0-3.0
	16-29	50-60	0.42-1.40	0.14-0.16	10.5-15.0	1.0-3.0
	29-35	35-60	0.42-2.00	0.14-0.19	12.0-15.0	0.0-1.0
	35-42	---	0.00-0.01	---	6.0-9.0	0.0-1.0
	40-60	---	0.02-0.42	---	0.0-3.0	0.0-1.0
415:						
Ignord fine sandy loam-------	0-4	8-20	14.00-30.00	0.14-0.15	0.0-1.0	1.0-4.0
	4-14	8-15	21.00-30.00	0.11-0.14	0.0-0.0	1.0-2.0
	14-25	8-15	21.00-30.00	0.11-0.14	0.0-0.0	1.0-2.0
	25-32	8-15	21.00-30.00	0.11-0.14	0.0-0.0	1.0-2.0
	32-53	8-15	21.00-30.00	0.11-0.14	0.0-0.0	0.1-1.0
	53-58	8-15	21.00-30.00	0.11-0.14	0.0-0.0	0.1-1.0
	58-77	8-15	21.00-30.00	0.11-0.14	0.0-0.0	0.1-1.0
416:						
Calcic Haploxerolls sandy loam------------------------	0-5	15-23	11.00-17.00	0.12-0.17	0.0-2.9	1.0-2.0
	5-17	15-25	8.00-17.00	0.12-0.17	0.0-2.9	1.0-2.0
	17-20	12-27	4.00-20.00	0.12-0.18	0.0-2.9	1.0-2.0
	20-33	12-27	4.00-20.00	0.12-0.18	0.0-2.9	1.0-2.0
	33-44	12-20	12.00-20.00	0.08-0.13	0.0-2.9	1.0-2.0
	44-72	---	0.02-0.42	---	---	---
418:						
Almendra loam----------------	0-4	15-27	4.00-21.00	0.14-0.18	1.0-3.5	2.5-5.0
	4-14	15-27	4.00-21.00	0.14-0.18	1.0-3.5	2.5-5.0
	14-29	17-27	4.00-20.00	0.14-0.18	1.0-3.5	1.0-2.5
	29-40	17-27	4.00-20.00	0.14-0.18	1.0-3.5	1.0-2.5
	40-52	15-27	4.00-21.00	0.14-0.18	1.0-3.5	0.5-1.0
	52-74	12-25	5.00-25.00	0.11-0.18	0.0-3.0	0.1-0.8
	74-86	12-25	5.00-25.00	0.11-0.18	0.0-3.0	0.1-0.8
419:						
Conejo fine sandy loam, overwash--------------------	0-17	10-20	8.00-28.00	0.13-0.16	0.0-1.0	1.0-2.0
	17-35	18-35	2.00-8.00	0.15-0.21	1.0-6.0	2.5-5.0
	35-45	18-35	2.00-8.00	0.15-0.21	1.0-6.0	1.0-2.5
	45-56	18-35	2.00-8.00	0.15-0.21	1.0-6.0	0.5-1.5
	56-62	15-35	2.00-21.00	0.12-0.21	1.0-6.0	0.1-0.8
	62-70	15-35	2.00-21.00	0.12-0.21	1.0-6.0	0.1-0.8
	70-72	15-35	2.00-21.00	0.12-0.21	1.0-6.0	0.1-0.8
420:						
Conejo clay loam-------------	0-5	27-35	2.00-4.00	0.19-0.21	3.0-6.0	3.0-6.0
	5-19	27-35	2.00-4.00	0.19-0.21	3.0-6.0	1.0-4.0
	19-30	27-35	2.00-4.00	0.19-0.21	3.0-6.0	1.0-4.0
	30-48	27-35	2.00-4.00	0.19-0.21	3.0-6.0	0.5-1.5
	48-70	15-35	2.00-21.00	0.13-0.21	1.0-6.0	0.1-0.8
425:						
Vina fine sandy loam---------	0-3	12-20	8.00-26.00	0.13-0.16	0.0-1.0	2.5-5.0
	3-11	12-20	8.00-26.00	0.13-0.16	0.0-1.0	2.5-5.0
	11-23	10-18	9.00-28.00	0.11-0.16	0.0-1.0	1.0-2.5
	23-37	10-18	9.00-28.00	0.11-0.16	0.0-1.0	1.0-2.5
	37-50	1-15	10.00-150.00	0.03-0.15	0.0-0.0	0.1-1.0
	50-54	1-15	10.00-150.00	0.03-0.15	0.0-0.0	0.1-1.0
	54-80	1-15	10.00-150.00	0.03-0.15	0.0-0.0	0.1-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
426:						
Vina loam	0-4	12-20	8.00-26.00	0.14-0.16	0.0-1.0	2.5-5.0
	4-15	5-18	9.00-35.00	0.11-0.16	0.0-1.0	2.5-5.0
	15-28	5-18	9.00-35.00	0.11-0.16	0.0-1.0	1.0-2.5
	28-44	5-18	9.00-35.00	0.11-0.16	0.0-1.0	1.0-2.5
	44-63	5-18	9.00-35.00	0.11-0.16	0.0-1.0	0.5-2.5
	63-72	5-18	9.00-35.00	0.11-0.16	0.0-1.0	0.1-1.0
439:						
Oxyaquic Xerofluvents clay	0-10	40-60	0.42-1.40	0.14-0.16	7.0-13.7	0.5-2.0
	10-13	40-60	0.42-1.40	0.14-0.16	7.0-13.7	1.0-2.0
	13-21	40-60	0.42-1.40	0.14-0.16	7.0-13.7	1.0-2.0
	21-27	5-15	17.00-80.00	0.15-0.17	0.0-1.0	0.0-0.5
	27-32	40-60	0.42-1.40	0.14-0.16	7.0-13.7	0.0-0.5
	32-37	35-40	1.40-2.00	0.17-0.19	6.0-7.3	0.0-0.5
	37-55	60-80	0.20-0.42	0.13-0.15	13.0-20.0	0.0-1.0
	55-63	60-80	0.20-0.42	0.14-0.15	13.0-20.0	0.0-0.5
	63-65	---	0.00-0.01	---	---	---
	65-80	40-60	0.42-1.40	0.14-0.16	7.0-13.7	0.0-0.5
440:						
Oxyaquic Xerofluvents silt loam, frequently flooded	0-9	5-27	4.00-80.00	0.14-0.20	0.0-3.0	0.5-2.0
	9-18	5-10	30.00-80.00	0.07-0.08	0.0-1.0	1.0-2.0
	18-25	10-27	4.00-30.00	0.14-0.20	0.5-3.0	1.0-2.0
	25-33	5-27	4.00-80.00	0.07-0.20	0.0-3.0	0.0-0.5
	33-44	15-30	2.00-17.00	0.15-0.21	0.5-4.0	0.0-0.5
	44-51	15-30	2.00-17.00	0.17-0.21	0.5-4.0	0.0-0.5
	51-60	40-70	0.30-1.40	0.13-0.16	7.0-16.5	0.0-1.0
441:						
Oxyaquic Xerofluvents very fine sandy loam	0-6	15-20	12.00-17.00	0.16-0.17	0.7-1.0	0.5-2.0
	6-20	18-27	4.00-14.00	0.17-0.20	0.9-3.0	1.0-2.0
	20-30	18-27	4.00-14.00	0.17-0.20	0.9-3.0	1.0-2.0
	30-43	5-15	17.00-80.00	0.15-0.17	0.0-1.0	0.0-0.5
	43-55	18-27	4.00-14.00	0.15-0.20	0.9-3.0	0.0-0.5
	55-72	5-20	12.00-80.00	0.10-0.18	0.0-1.0	0.0-0.5
	72-75	40-60	0.42-1.40	0.14-0.16	7.0-13.7	0.0-1.0
442:						
Durixerolls clay loam	0-6	27-40	0.42-3.50	0.15-0.21	3.0-7.3	1.0-4.0
	6-12	27-40	0.42-3.50	0.15-0.21	3.0-7.3	1.0-2.0
	12-24	25-35	2.00-8.00	0.15-0.21	3.0-6.0	0.5-1.0
	24-33	17-35	2.00-15.00	0.12-0.21	0.8-6.0	0.1-0.8
	33	---	0.00-0.01	---	---	---
Haploxerolls clay loam	0-5	27-35	2.00-4.00	0.19-0.21	3.0-6.0	2.5-5.0
	5-18	27-35	2.00-4.00	0.19-0.21	3.0-6.0	2.5-5.0
	18-29	25-35	2.00-8.00	0.18-0.21	3.0-6.0	1.0-2.5
	29-44	20-35	2.00-12.00	0.17-0.21	2.5-6.0	1.0-2.5
	44-57	10-35	2.00-30.00	0.12-0.21	1.0-6.0	0.1-0.8
	57	---	0.00-0.01	---	---	---
443:						
Durixerolls loam	0-4	18-25	8.00-14.00	0.16-0.18	0.9-3.0	1.0-4.0
	4-10	17-25	8.00-15.00	0.16-0.18	0.8-3.0	1.0-2.0
	10-17	18-25	8.00-14.00	0.15-0.18	0.9-3.0	0.5-1.0
	17-23	18-30	2.50-14.00	0.15-0.18	0.9-4.2	0.5-1.0
	23-26	18-30	2.50-14.00	0.15-0.18	0.9-4.2	0.1-0.8
	26	---	0.00-0.01	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
443:						
Haploxerolls loam	0-5	20-27	4.00-12.00	0.17-0.18	1.0-3.0	2.5-5.0
	5-16	20-27	4.00-12.00	0.17-0.18	1.0-3.0	2.5-5.0
	16-27	18-27	4.00-14.00	0.16-0.18	0.9-3.0	1.0-2.5
	27-40	18-27	4.00-14.00	0.13-0.18	0.9-3.0	1.0-2.5
	40-48	9-27	4.00-34.00	0.11-0.18	0.4-3.0	1.0-2.5
	48-52	9-27	4.00-34.00	0.11-0.18	0.4-3.0	0.1-0.8
	52	---	0.00-0.01	---	---	---
445:						
Chico loam	0-5	20-27	4.00-8.00	0.16-0.18	2.0-3.5	1.0-5.0
	5-10	25-35	2.00-5.00	0.18-0.21	3.0-6.0	1.0-3.0
	10-21	25-35	2.00-5.00	0.18-0.21	3.0-6.0	1.0-3.0
	21-32	25-35	2.00-5.00	0.18-0.21	3.0-6.0	0.5-2.0
	32-50	18-35	2.00-9.00	0.16-0.21	1.5-6.0	0.1-1.0
	50-70	18-35	2.00-9.00	0.16-0.21	1.5-6.0	0.1-1.0
	70-80	18-35	2.00-9.00	0.16-0.21	1.5-6.0	0.1-1.0
447:						
Charger fine sandy loam	0-3	8-17	16.00-30.00	0.11-0.15	0.0-1.0	2.0-6.0
	3-7	8-17	16.00-30.00	0.09-0.15	0.0-1.0	1.0-5.0
	7-15	8-17	16.00-30.00	0.09-0.15	0.0-1.0	1.0-5.0
	15-32	8-17	16.00-32.00	0.07-0.15	0.0-1.0	0.1-2.0
	32-42	8-17	16.00-32.00	0.07-0.15	0.0-1.0	0.1-2.0
	42-53	8-17	16.00-32.00	0.07-0.15	0.0-1.0	0.1-2.0
	53-63	8-17	16.00-32.00	0.07-0.15	0.0-1.0	0.1-2.0
	63-80	1-10	28.00-705.00	0.01-0.09	0.0-0.0	0.0-0.3
448:						
Haploxerolls clay loam	0-5	27-35	2.00-4.00	0.19-0.21	3.0-6.0	2.5-5.0
	5-10	27-35	2.00-4.00	0.19-0.21	3.0-6.0	2.5-5.0
	10-24	27-35	2.00-4.00	0.19-0.21	3.0-6.0	1.0-2.5
	24-39	27-35	2.00-4.00	0.19-0.21	3.0-6.0	1.0-2.5
	39-66	18-35	4.00-14.00	0.13-0.21	0.9-6.0	0.1-0.8
449:						
Haploxerolls loam	0-4	18-27	4.00-14.00	0.16-0.18	0.9-3.0	2.5-5.0
	4-10	18-27	4.00-14.00	0.16-0.20	0.9-3.0	2.5-5.0
	10-24	18-27	4.00-14.00	0.16-0.20	0.9-3.0	1.0-2.5
	24-36	18-27	4.00-14.00	0.16-0.20	0.9-3.0	1.0-2.5
	36-52	18-27	4.00-14.00	0.16-0.20	0.9-3.0	0.5-1.0
	52-60	10-27	4.00-30.00	0.11-0.21	0.5-3.0	0.1-0.8
500:						
Lofgren clay	0-5	60-70	0.30-0.42	0.12-0.15	13.5-16.5	1.0-3.0
	5-12	60-70	0.30-0.42	0.12-0.15	13.5-16.5	1.0-2.0
	12-29	60-70	0.30-0.42	0.12-0.15	13.5-16.5	0.5-1.0
	29-38	60-70	0.30-0.42	0.12-0.15	13.5-16.5	0.5-1.0
	38-44	60-70	0.42-0.90	0.12-0.15	13.5-16.5	0.5-1.0
	44-47	27-40	1.40-4.00	0.17-0.19	3.0-9.0	0.1-0.5
	47-62	---	0.00-0.01	---	1.0-3.0	---
	62-82	---	0.00-0.01	---	3.0-6.0	---
Blavo clay	0-5	60-70	0.30-0.42	0.13-0.15	13.5-16.5	1.0-3.0
	5-16	60-70	0.30-0.42	0.13-0.15	13.5-16.5	1.0-2.0
	16-24	60-70	0.30-0.42	0.13-0.15	13.5-16.5	0.5-1.0
	24-30	60-70	0.30-0.42	0.13-0.15	13.5-16.5	0.5-1.0
	30-36	35-60	0.42-2.00	0.14-0.19	3.0-13.5	0.1-0.5
	36-60	---	0.00-0.01	---	1.0-3.0	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
501:						
Lofgren clay, occasionally flooded	0-5	60-70	0.30-0.42	0.12-0.15	13.5-16.5	1.0-3.0
	5-12	60-70	0.30-0.42	0.12-0.15	13.5-16.5	1.0-2.0
	12-22	60-70	0.30-0.42	0.12-0.15	13.5-16.5	0.5-1.0
	22-30	60-70	0.30-0.42	0.12-0.15	13.5-16.5	0.5-1.0
	30-41	60-70	0.30-0.42	0.12-0.15	13.5-16.5	0.5-1.0
	41-45	27-40	1.40-4.00	0.17-0.19	3.0-9.0	0.1-0.5
	45-60	---	0.00-0.01	---	1.0-3.0	---
Blavo clay, occasionally flooded	0-6	60-70	0.30-0.42	0.13-0.15	13.0-16.5	1.0-3.0
	6-10	60-70	0.30-0.42	0.13-0.15	13.5-16.5	1.0-2.0
	10-22	60-70	0.30-0.42	0.13-0.15	13.5-16.5	0.5-1.0
	22-29	60-70	0.30-0.42	0.13-0.15	13.5-16.5	0.5-1.0
	29-36	35-60	0.42-2.00	0.15-0.19	3.0-13.5	0.1-0.5
	36-42	---	0.00-0.01	---	1.0-3.0	---
502:						
Blavo silt loam, overwash, occasionally flooded	0-7	18-27	4.00-14.00	0.17-0.20	3.0-6.0	1.0-2.0
	7-14	60-70	0.30-0.42	0.13-0.15	13.0-16.5	1.0-2.0
	14-22	60-70	0.30-0.42	0.13-0.15	13.5-16.5	0.5-1.0
	22-29	60-70	0.30-0.42	0.13-0.15	13.5-16.5	0.5-1.0
	29-36	60-70	0.30-0.42	0.13-0.15	13.5-16.5	0.1-0.5
	36-50	---	0.00-0.01	---	1.0-3.0	---
519:						
Edjobe silty clay	0-8	40-55	0.45-1.40	0.15-0.17	9.0-12.0	1.0-3.0
	8-25	40-55	0.45-1.40	0.15-0.17	9.0-12.0	0.5-1.5
	25-32	40-50	0.50-1.40	0.15-0.17	9.0-10.0	0.2-1.0
	32-48	27-40	1.40-4.00	0.17-0.21	3.0-9.0	0.1-0.6
	48-60	25-40	1.40-5.00	0.17-0.21	3.0-9.0	0.1-0.5
	60-69	25-35	2.00-5.00	0.18-0.21	3.0-6.0	0.1-0.3
	69-75	---	0.00-0.06	---	---	---
520:						
Esquon clay	0-5	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.5
	5-11	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.5-1.0
	11-22	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.4-1.0
	22-35	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.4-1.0
	35-46	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.1-0.5
	46-50	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.1-0.5
	50-56	25-60	0.42-8.00	0.14-0.21	3.0-16.0	0.1-0.5
	56-67	---	0.00-0.01	---	3.0-6.0	0.0-0.1
Neerdobe clay	0-5	40-60	0.42-1.40	0.14-0.16	9.0-13.5	1.0-2.5
	5-15	40-60	0.42-1.40	0.14-0.16	9.0-13.5	0.5-1.0
	15-23	40-60	0.42-1.40	0.14-0.16	9.0-13.5	0.5-1.0
	23-28	40-60	0.42-1.40	0.14-0.16	9.0-13.5	0.5-1.0
	28-33	35-60	0.42-2.00	0.15-0.19	6.0-13.5	0.1-0.5
	33-38	18-27	4.00-14.00	0.16-0.18	0.0-3.0	0.1-0.5
	38-56	18-27	0.00-0.01	---	0.0-3.0	0.0-0.1
521:						
Neerdobe silt loam, overwash	0-7	2-25	8.00-42.00	0.15-0.20	0.0-1.0	1.0-2.0
	7-16	2-25	8.00-42.00	0.15-0.20	0.0-1.0	0.5-1.0
	16-20	2-10	30.00-42.00	0.09-0.11	0.0-1.0	0.1-0.5
	20-33	40-60	0.42-1.40	0.14-0.16	9.0-13.5	1.0-2.5
	33-47	40-60	0.42-1.40	0.14-0.16	9.0-13.5	0.5-1.0
	47-52	---	0.00-0.01	---	0.0-3.0	---
	52-60	---	0.00-0.01	---	0.0-3.0	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
522:						
Clear Lake silty clay loam, overwash	0-6	35-40	1.40-2.00	0.17-0.19	8.0-9.0	1.0-2.0
	6-12	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.5
	12-35	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.5-1.0
	35-50	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.4-1.0
	50-60	35-60	0.42-2.00	0.14-0.19	8.0-13.5	0.1-0.5
	60-70	35-60	0.42-2.00	0.14-0.19	8.0-13.5	0.1-0.5
	70-72	35-60	0.42-2.00	0.14-0.19	8.0-13.5	0.1-0.5
523:						
Esquon silty clay loam, overwash	0-10	35-40	1.40-2.00	0.17-0.19	6.0-9.0	1.0-2.0
	10-18	40-60	0.42-1.40	0.14-0.17	9.0-13.5	1.0-2.5
	18-46	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.1-0.5
	46-60	---	0.00-0.01	---	---	---
525:						
Govstanford loam	0-3	15-27	4.00-21.00	0.13-0.18	1.0-3.0	1.0-2.0
	3-11	15-27	4.00-21.00	0.13-0.18	1.0-3.0	1.0-2.0
	11-18	3-18	9.00-130.00	0.06-0.17	0.0-1.0	0.1-0.8
	18-25	3-18	9.00-130.00	0.06-0.17	0.0-1.0	0.1-0.8
	25-34	5-18	9.00-125.00	0.06-0.17	0.0-1.0	0.1-0.5
	34-42	40-60	0.42-1.40	0.13-0.16	7.5-14.0	1.0-3.0
	42-61	40-60	0.42-1.40	0.13-0.16	7.5-14.0	0.5-1.5
	61-72	35-55	0.60-2.00	0.15-0.19	6.0-12.0	0.2-1.0
526:						
Govstanford loam, occasionally flooded	0-3	15-27	4.00-21.00	0.13-0.18	1.0-3.0	1.0-2.0
	3-11	15-27	4.00-21.00	0.13-0.18	1.0-3.0	1.0-2.0
	11-18	3-18	9.00-130.00	0.06-0.17	0.0-1.0	0.1-0.8
	18-25	3-18	9.00-130.00	0.06-0.17	0.0-1.0	0.1-0.8
	25-34	5-18	9.00-125.00	0.06-0.17	0.0-1.0	0.1-0.5
	34-42	40-60	0.42-1.40	0.13-0.16	7.5-14.0	1.0-3.0
	42-61	40-60	0.42-1.40	0.13-0.16	7.5-14.0	0.5-1.5
	61-72	35-55	0.60-2.00	0.15-0.19	6.0-12.0	0.2-1.0
528:						
Neerdobe clay loam	0-10	35-40	1.40-2.00	0.17-0.19	9.0-9.1	1.0-2.5
	10-18	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.5-1.0
	18-25	40-60	0.42-1.40	0.14-0.17	9.0-13.5	0.1-0.5
	25	---	0.00-0.01	---	---	---
550:						
Dunstone loam, dry	0-2	12-20	12.00-20.00	0.11-0.16	0.6-1.0	5.0-8.0
	2-7	16-22	11.00-16.00	0.11-0.16	0.8-2.0	1.0-2.0
	7-10	16-24	10.00-17.00	0.11-0.18	0.6-3.0	0.5-2.0
	10-16	23-32	3.00-11.00	0.09-0.18	2.0-5.0	0.5-2.0
	16	---	---	---	---	0.0-0.0
Loafercreek silt loam, dry	0-2	14-22	11.00-15.00	0.15-0.19	0.7-2.0	5.0-10
	2-4	15-24	13.00-15.00	0.16-0.19	0.7-2.3	1.0-4.0
	4-11	15-24	13.00-15.00	0.15-0.17	0.7-2.3	1.0-4.0
	11-20	18-30	3.00-14.00	0.15-0.20	0.9-4.2	0.5-1.5
	20-29	18-30	3.00-15.00	0.17-0.21	1.0-4.2	0.5-1.5
	29	---	---	0.00-0.00	---	0.0-0.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
551:						
Dunstone loam, dry----------	0-2	12-20	12.00-20.00	0.11-0.16	0.6-1.0	5.0-8.0
	2-7	16-22	11.00-16.00	0.11-0.16	0.8-2.0	1.0-2.0
	7-10	16-24	10.00-17.00	0.11-0.18	0.6-3.0	0.5-2.0
	10-16	23-32	3.00-11.00	0.09-0.18	2.0-5.0	0.5-2.0
	16	---	---	---	---	0.0-0.0
Lomarica loam----------	0-1	15-20	13.00-17.00	0.14-0.17	0.7-1.0	5.0-10
	1-5	18-23	11.00-14.00	0.13-0.17	0.9-2.0	1.0-4.0
	5-9	29-38	1.20-3.00	0.07-0.20	3.0-7.0	0.5-2.0
	9-12	32-44	0.85-2.50	0.06-0.17	3.0-7.0	0.5-2.0
	12-25	35-45	0.85-2.00	0.05-0.08	6.0-8.0	0.5-2.0
	25-32	45-55	0.60-0.85	0.03-0.14	6.0-9.0	0.5-1.0
	32	---	---	---	---	---
Argonaut taxadjunct loam-----	0-2	18-30	3.00-14.00	0.14-0.19	0.9-4.0	2.0-6.0
	2-8	28-40	1.40-4.00	0.15-0.20	3.5-7.3	1.0-3.0
	8-14	40-50	0.80-1.40	0.12-0.16	7.0-9.0	1.0-2.0
	14-20	40-50	0.80-1.40	0.12-0.16	7.0-9.0	1.0-2.0
	20-26	36-45	1.20-2.00	0.14-0.18	6.0-9.0	0.0-1.0
	26-30	36-45	1.20-2.00	0.14-0.18	6.0-9.0	0.0-1.0
	30	---	---	---	---	---
552:						
Dunstone gravelly loam-------	0-4	12-20	12.00-20.00	0.12-0.17	0.6-1.0	5.0-8.0
	4-6	14-22	12.00-18.00	0.11-0.17	0.7-2.0	1.0-2.0
	6-10	15-27	4.00-13.00	0.10-0.20	0.7-3.0	1.0-2.0
	10-15	18-35	2.00-14.00	0.10-0.20	0.9-6.0	0.5-1.5
	15-37	---	---	---	---	---
	37	---	---	---	---	---
Loafercreek gravelly loam----	0-0.5	---	---	---	---	---
	0.5-2	14-22	11.00-15.00	0.12-0.16	0.7-2.0	5.0-10
	2-6	15-24	13.00-15.00	0.11-0.16	0.7-2.5	1.0-4.0
	6-12	18-30	3.00-14.00	0.11-0.19	0.9-4.2	0.5-2.0
	12-23	20-30	3.00-15.00	0.12-0.19	1.0-4.2	0.5-1.5
	23-31	20-30	3.00-15.00	0.11-0.19	1.0-4.2	0.5-1.5
	31-42	---	---	---	---	0.0-0.0
	42	---	---	---	---	0.0-0.0
553:						
Dunstone gravelly loam-------	0-4	12-20	12.00-20.00	0.12-0.17	0.6-1.0	5.0-8.0
	4-6	14-22	12.00-18.00	0.11-0.17	0.7-2.0	1.0-2.0
	6-10	15-27	4.00-13.00	0.10-0.20	0.7-3.0	1.0-2.0
	10-15	18-35	2.00-14.00	0.10-0.20	0.9-6.0	0.5-1.5
	15-37	---	---	---	---	---
	37	---	---	---	---	---
Loafercreek gravelly loam----	0-0.5	---	---	---	---	---
	0.5-2	14-22	11.00-15.00	0.12-0.16	0.7-2.0	5.0-10
	2-6	15-24	13.00-15.00	0.11-0.16	0.7-2.5	1.0-4.0
	6-12	18-30	3.00-14.00	0.11-0.19	0.9-4.2	0.5-2.0
	12-23	20-30	3.00-15.00	0.12-0.19	1.0-4.2	0.5-1.5
	23-31	20-30	3.00-15.00	0.11-0.19	1.0-4.2	0.5-1.5
	31-42	---	---	---	---	0.0-0.0
	42	---	---	---	---	0.0-0.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
554:						
Dunstone gravelly loam-------	0-4	12-20	12.00-20.00	0.12-0.17	0.6-1.0	5.0-8.0
	4-6	14-22	12.00-18.00	0.11-0.17	0.7-2.0	1.0-2.0
	6-10	15-27	4.00-13.00	0.10-0.20	0.7-3.0	1.0-2.0
	10-15	18-35	2.00-14.00	0.10-0.20	0.9-6.0	0.5-1.5
	15-37	---	---	---	---	---
	37	---	---	---	---	---
Loafercreek gravelly loam----	0-0.5	---	---	---	---	---
	0.5-2	14-22	11.00-15.00	0.12-0.16	0.7-2.0	5.0-10
	2-6	15-24	13.00-15.00	0.11-0.16	0.7-2.5	1.0-4.0
	6-12	18-30	3.00-14.00	0.11-0.19	0.9-4.2	0.5-2.0
	12-23	20-30	3.00-15.00	0.12-0.19	1.0-4.2	0.5-1.5
	23-31	20-30	3.00-15.00	0.11-0.19	1.0-4.2	0.5-1.5
	31-42	---	---	---	---	0.0-0.0
	42	---	---	---	---	0.0-0.0
555:						
Dunstone gravelly loam-------	0-4	12-20	12.00-20.00	0.12-0.17	0.6-1.0	5.0-8.0
	4-6	14-22	12.00-18.00	0.11-0.17	0.7-2.0	1.0-2.0
	6-10	15-27	4.00-13.00	0.10-0.20	0.7-3.0	1.0-2.0
	10-15	18-35	2.00-14.00	0.10-0.20	0.9-6.0	0.5-1.5
	15-37	---	---	---	---	---
	37	---	---	---	---	---
Loafercreek gravelly loam----	0-0.5	---	---	---	---	---
	0.5-2	14-22	11.00-15.00	0.12-0.16	0.7-2.0	5.0-10
	2-6	15-24	13.00-15.00	0.11-0.16	0.7-2.5	1.0-4.0
	6-12	18-30	3.00-14.00	0.11-0.19	0.9-4.2	0.5-2.0
	12-23	20-30	3.00-15.00	0.12-0.19	1.0-4.2	0.5-1.5
	23-31	20-30	3.00-15.00	0.11-0.19	1.0-4.2	0.5-1.5
	31-42	---	---	---	---	0.0-0.0
	42	---	---	---	---	0.0-0.0
556:						
Mounthope loam---------------	0-1	---	---	---	---	---
	1-3	17-25	4.00-14.00	0.11-0.18	1.0-3.0	1.0-3.5
	3-7	20-27	4.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	7-15	20-27	3.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	15-22	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.8-2.0
	22-26	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.5-1.0
	26-31	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.5-1.0
	31-42	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.2-1.0
	42-52	20-35	2.00-14.00	0.09-0.20	1.0-6.0	0.2-1.0
	52	---	---	---	---	---
Hartsmill gravelly loam------	0-1	---	---	---	---	---
	1-3	14-18	14.00-20.00	0.11-0.14	0.0-1.0	1.0-3.0
	3-6	17-30	3.00-14.00	0.08-0.15	1.0-4.5	1.0-3.0
	6-13	17-30	3.00-14.00	0.08-0.18	1.0-4.5	1.0-3.0
	13-24	17-30	3.00-14.00	0.05-0.14	1.0-4.5	0.8-1.0
	24-35	28-40	1.40-4.00	0.06-0.14	3.5-9.0	0.5-1.0
	35-62	28-40	1.40-4.00	0.04-0.12	3.5-9.0	0.3-1.0
	62	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
557:						
Mounthope loam----------	0-1	---	---	---	---	---
	1-3	17-25	4.00-14.00	0.11-0.18	1.0-3.0	1.0-3.5
	3-7	20-27	4.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	7-15	20-27	3.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	15-22	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.8-2.0
	22-26	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.5-1.0
	26-31	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.5-1.0
	31-42	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.2-1.0
	42-52	20-35	2.00-14.00	0.09-0.20	1.0-6.0	0.2-1.0
	52	---	---	---	---	---
Hartsmill gravelly loam------	0-1	---	---	---	---	---
	1-3	14-18	14.00-20.00	0.11-0.14	0.0-1.0	1.0-3.0
	3-6	17-30	3.00-14.00	0.08-0.15	1.0-4.5	1.0-3.0
	6-13	17-30	3.00-14.00	0.08-0.18	1.0-4.5	1.0-3.0
	13-24	17-30	3.00-14.00	0.05-0.14	1.0-4.5	0.8-1.0
	24-35	28-40	1.40-4.00	0.06-0.14	3.5-9.0	0.5-1.0
	35-62	28-40	1.40-4.00	0.04-0.12	3.5-9.0	0.3-1.0
	62	---	---	---	---	---
558:						
Hartsmill gravelly loam------	0-1	---	---	---	---	---
	1-3	14-18	14.00-20.00	0.11-0.14	0.0-1.0	1.0-3.0
	3-6	17-30	3.00-14.00	0.08-0.15	1.0-4.5	1.0-3.0
	6-13	17-30	3.00-14.00	0.08-0.18	1.0-4.5	1.0-3.0
	13-24	17-30	3.00-14.00	0.05-0.14	1.0-4.5	0.8-1.0
	24-35	28-40	1.40-4.00	0.06-0.14	3.5-9.0	0.5-1.0
	35-62	28-40	1.40-4.00	0.04-0.12	3.5-9.0	0.3-1.0
	62	---	---	---	---	---
Mounthope loam----------	0-1	---	---	---	---	---
	1-3	17-25	4.00-14.00	0.11-0.18	1.0-3.0	1.0-3.5
	3-7	20-27	4.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	7-15	20-27	3.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	15-22	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.8-2.0
	22-26	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.5-1.0
	26-31	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.5-1.0
	31-42	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.2-1.0
	42-52	20-35	2.00-14.00	0.09-0.20	1.0-6.0	0.2-1.0
	52	---	---	---	---	---
559:						
Hartsmill gravelly loam------	0-1	---	---	---	---	---
	1-3	14-18	14.00-20.00	0.11-0.14	0.0-1.0	1.0-3.0
	3-6	17-30	3.00-14.00	0.08-0.15	1.0-4.5	1.0-3.0
	6-13	17-30	3.00-14.00	0.08-0.18	1.0-4.5	1.0-3.0
	13-24	17-30	3.00-14.00	0.05-0.14	1.0-4.5	0.8-1.0
	24-35	28-40	1.40-4.00	0.06-0.14	3.5-9.0	0.5-1.0
	35-62	28-40	1.40-4.00	0.04-0.12	3.5-9.0	0.3-1.0
	62	---	---	---	---	---
Mounthope loam----------	0-1	---	---	---	---	---
	1-3	17-25	4.00-14.00	0.11-0.18	1.0-3.0	1.0-3.5
	3-7	20-27	4.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	7-15	20-27	3.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	15-22	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.8-2.0
	22-26	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.5-1.0
	26-31	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.5-1.0
	31-42	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.2-1.0
	42-52	20-35	2.00-14.00	0.09-0.20	1.0-6.0	0.2-1.0
	52	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
560:						
Hartsmill gravelly loam------	0-1	---	---	---	---	---
	1-3	14-18	14.00-20.00	0.11-0.14	0.0-1.0	1.0-3.0
	3-6	17-30	3.00-14.00	0.08-0.15	1.0-4.5	1.0-3.0
	6-13	17-30	3.00-14.00	0.08-0.18	1.0-4.5	1.0-3.0
	13-24	17-30	3.00-14.00	0.05-0.14	1.0-4.5	0.8-1.0
	24-35	28-40	1.40-4.00	0.06-0.14	3.5-9.0	0.5-1.0
	35-62	28-40	1.40-4.00	0.04-0.12	3.5-9.0	0.3-1.0
	62	---	---	---	---	---
Mounthope loam----------	0-1	---	---	---	---	---
	1-3	17-25	4.00-14.00	0.11-0.18	1.0-3.0	1.0-3.5
	3-7	20-27	4.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	7-15	20-27	3.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	15-22	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.8-2.0
	22-26	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.5-1.0
	26-31	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.5-1.0
	31-42	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.2-1.0
	42-52	20-35	2.00-14.00	0.09-0.20	1.0-6.0	0.2-1.0
	52	---	---	---	---	---
561:						
Bigridge loam----------	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
Minniecreek loam----------	0-2	15-20	13.00-16.00	0.10-0.17	1.0-2.0	1.0-4.0
	2-8	18-22	12.00-14.00	0.06-0.17	1.0-2.0	1.0-4.0
	8-15	24-30	4.00-10.00	0.12-0.18	3.0-4.5	1.0-4.0
	15-24	24-30	3.00-4.00	0.18-0.21	3.0-4.5	0.5-1.0
	24-32	29-37	1.90-3.50	0.13-0.20	4.0-7.0	0.3-1.0
	32-47	---	---	---	---	---
	47-58	---	---	---	---	---
	58-75	---	---	---	---	---
562:						
Bigridge loam----------	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
Minniecreek loam----------	0-2	15-20	13.00-16.00	0.10-0.17	1.0-2.0	1.0-4.0
	2-8	18-22	12.00-14.00	0.06-0.17	1.0-2.0	1.0-4.0
	8-15	24-30	4.00-10.00	0.12-0.18	3.0-4.5	1.0-4.0
	15-24	24-30	3.00-4.00	0.18-0.21	3.0-4.5	0.5-1.0
	24-32	29-37	1.90-3.50	0.13-0.20	4.0-7.0	0.3-1.0
	32-47	---	---	---	---	---
	47-58	---	---	---	---	---
	58-75	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
563:						
Bigridge loam	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
Minniecreek loam	0-2	15-20	13.00-16.00	0.10-0.17	1.0-2.0	1.0-4.0
	2-8	18-22	12.00-14.00	0.06-0.17	1.0-2.0	1.0-4.0
	8-15	24-30	4.00-10.00	0.12-0.18	3.0-4.5	1.0-4.0
	15-24	24-30	3.00-4.00	0.18-0.21	3.0-4.5	0.5-1.0
	24-32	29-37	1.90-3.50	0.13-0.20	4.0-7.0	0.3-1.0
	32-47	---	---	---	---	---
	47-58	---	---	---	---	---
	58-75	---	---	---	---	---
564:						
Bigridge loam	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
Minniecreek loam	0-2	15-20	13.00-16.00	0.10-0.17	1.0-2.0	1.0-4.0
	2-8	18-22	12.00-14.00	0.06-0.17	1.0-2.0	1.0-4.0
	8-15	24-30	4.00-10.00	0.12-0.18	3.0-4.5	1.0-4.0
	15-24	24-30	3.00-4.00	0.18-0.21	3.0-4.5	0.5-1.0
	24-32	29-37	1.90-3.50	0.13-0.20	4.0-7.0	0.3-1.0
	32-47	---	---	---	---	---
	47-58	---	---	---	---	---
	58-75	---	---	---	---	---
565:						
Dunstone loam, dry	0-2	12-20	12.00-20.00	0.11-0.16	0.6-1.0	5.0-8.0
	2-7	16-22	11.00-16.00	0.11-0.16	0.8-2.0	1.0-2.0
	7-10	16-24	10.00-17.00	0.11-0.18	0.6-3.0	0.5-2.0
	10-16	23-32	3.00-11.00	0.09-0.18	2.0-5.0	0.5-2.0
	16	---	---	---	---	0.0-0.0
Argonaut taxadjunct loam	0-2	18-30	3.00-14.00	0.14-0.19	0.9-4.0	2.0-6.0
	2-8	28-40	1.40-4.00	0.15-0.20	3.5-7.3	1.0-3.0
	8-14	40-50	0.80-1.40	0.12-0.16	7.0-9.0	1.0-2.0
	14-20	40-50	0.80-1.40	0.12-0.16	7.0-9.0	1.0-2.0
	20-26	36-45	1.20-2.00	0.14-0.18	6.0-9.0	0.0-1.0
	26-30	36-45	1.20-2.00	0.14-0.18	6.0-9.0	0.0-1.0
	30	---	---	---	---	---
Sunnyslope loam	0-2	10-18	14.00-30.00	0.13-0.16	0.0-3.0	3.0-7.0
	2-6	15-20	12.00-17.00	0.10-0.15	0.0-3.0	1.0-4.0
	6-10	15-30	3.00-17.00	0.05-0.13	0.0-3.0	0.5-2.0
	10-14	15-30	3.00-17.00	0.05-0.13	0.0-3.0	0.5-2.0
	14	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
566:						
Dunstone loam, dry----------	0-2	12-20	12.00-20.00	0.11-0.16	0.6-1.0	5.0-8.0
	2-7	16-22	11.00-16.00	0.11-0.16	0.8-2.0	1.0-2.0
	7-10	16-24	10.00-17.00	0.11-0.18	0.6-3.0	0.5-2.0
	10-16	23-32	3.00-11.00	0.09-0.18	2.0-5.0	0.5-2.0
	16	---	---	---	---	0.0-0.0
Loafercreek silt loam, dry---	0-2	14-22	11.00-15.00	0.15-0.19	0.7-2.0	5.0-10
	2-4	15-24	13.00-15.00	0.16-0.19	0.7-2.3	1.0-4.0
	4-11	15-24	13.00-15.00	0.15-0.17	0.7-2.3	1.0-4.0
	11-20	18-30	3.00-14.00	0.15-0.20	0.9-4.2	0.5-1.5
	20-29	18-30	3.00-15.00	0.17-0.21	1.0-4.2	0.5-1.5
	29	---	---	0.00-0.00	---	0.0-0.0
Katskillhill loam----------	0-2	12-18	14.00-20.00	0.14-0.16	0.6-3.0	3.0-9.0
	2-8	15-20	13.00-17.00	0.13-0.16	0.7-3.0	1.0-4.0
	8-12	21-25	8.00-12.00	0.07-0.17	1.0-3.0	1.0-1.5
	12-19	35-50	0.90-2.00	0.12-0.19	6.0-9.0	0.5-1.0
	19-29	45-55	0.80-0.90	0.14-0.17	8.0-9.0	0.0-0.5
	29-42	45-55	0.80-0.90	0.14-0.17	8.0-9.0	0.0-0.5
	42	---	---	---	---	---
567:						
Dunstone loam, dry----------	0-2	12-20	12.00-20.00	0.11-0.16	0.6-1.0	5.0-8.0
	2-7	16-22	11.00-16.00	0.11-0.16	0.8-2.0	1.0-2.0
	7-10	16-24	10.00-17.00	0.11-0.18	0.6-3.0	0.5-2.0
	10-16	23-32	3.00-11.00	0.09-0.18	2.0-5.0	0.5-2.0
	16	---	---	---	---	0.0-0.0
Loafercreek silt loam, dry---	0-2	14-22	11.00-15.00	0.15-0.19	0.7-2.0	5.0-10
	2-4	15-24	13.00-15.00	0.16-0.19	0.7-2.3	1.0-4.0
	4-11	15-24	13.00-15.00	0.15-0.17	0.7-2.3	1.0-4.0
	11-20	18-30	3.00-14.00	0.15-0.20	0.9-4.2	0.5-1.5
	20-29	18-30	3.00-15.00	0.17-0.21	1.0-4.2	0.5-1.5
	29	---	---	0.00-0.00	---	0.0-0.0
Argonaut taxadjunct loam-----	0-2	18-30	3.00-14.00	0.14-0.19	0.9-4.0	2.0-6.0
	2-8	28-40	1.40-4.00	0.15-0.20	3.5-7.3	1.0-3.0
	8-14	40-50	0.80-1.40	0.12-0.16	7.0-9.0	1.0-2.0
	14-20	40-50	0.80-1.40	0.12-0.16	7.0-9.0	1.0-2.0
	20-26	36-45	1.20-2.00	0.14-0.18	6.0-9.0	0.0-1.0
	26-30	36-45	1.20-2.00	0.14-0.18	6.0-9.0	0.0-1.0
	30	---	---	---	---	---
577:						
Parkshill coarse sandy loam--	0-2	12-17	14.00-20.00	0.11-0.16	0.7-1.0	2.0-8.0
	2-8	14-17	14.00-20.00	0.11-0.13	0.7-1.0	1.0-3.0
	8-18	16-19	14.00-16.00	0.12-0.13	0.8-1.0	0.2-1.0
	18-26	16-19	14.00-16.00	0.12-0.13	0.9-1.0	0.2-1.0
	26-35	18-23	4.00-14.00	0.10-0.18	1.0-2.0	0.0-0.2
	35-53	18-33	4.00-14.00	0.10-0.18	1.0-6.0	0.0-0.2
	53-61	16-26	4.00-16.00	0.10-0.18	1.0-3.0	0.0-0.2
Flanly loam----------	0-2	12-18	12.00-18.00	0.10-0.15	0.7-1.0	3.0-5.0
	2-5	15-20	12.00-17.00	0.10-0.16	0.7-1.0	1.0-3.0
	5-10	18-28	3.00-14.00	0.11-0.21	0.9-3.5	1.0-3.0
	10-23	22-35	2.00-12.00	0.14-0.17	1.5-6.0	0.5-2.0
	23-26	---	---	---	---	0.0-0.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
577:						
Hurleton gravelly sandy loam	0-3	10-17	14.00-30.00	0.07-0.14	0.5-1.0	3.0-8.0
	3-7	10-17	14.00-30.00	0.07-0.14	0.5-1.0	3.0-8.0
	7-12	14-20	14.00-18.00	0.07-0.10	0.7-1.0	1.2-3.0
	12-16	16-24	4.00-16.00	0.05-0.11	0.8-2.5	0.4-1.3
	16-19	19-32	3.00-14.00	0.05-0.14	0.9-5.0	0.2-0.6
	19-25	20-35	2.00-11.00	0.04-0.12	1.0-6.0	0.0-0.4
	25	---	---	---	---	---
578:						
Flanly loam-----------	0-2	12-18	12.00-18.00	0.10-0.15	0.7-1.0	3.0-5.0
	2-5	15-20	12.00-17.00	0.10-0.16	0.7-1.0	1.0-3.0
	5-10	18-28	3.00-14.00	0.11-0.21	0.9-3.5	1.0-3.0
	10-23	22-35	2.00-12.00	0.14-0.17	1.5-6.0	0.5-2.0
	23-26	---	---	---	---	0.0-0.0
Swedesflat cobbly fine sandy loam----------	0-2	12-20	12.00-20.00	0.08-0.17	0.6-1.0	2.0-8.0
	2-8	13-20	12.00-19.00	0.07-0.16	0.6-1.0	1.5-3.0
	8-12	18-25	4.00-14.00	0.09-0.18	0.9-2.6	0.2-1.5
	12-18	---	---	---	---	---
	18	---	---	---	---	---
580:						
Surnuf taxadjunct loam-------	0-1	---	---	---	---	---
	1-5	20-25	4.00-14.00	0.15-0.17	1.0-3.0	5.0-8.0
	5-11	22-40	4.00-14.00	0.11-0.21	1.0-9.0	3.0-6.0
	11-18	35-55	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	18-31	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	31-43	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	43-54	35-65	4.00-11.00	0.05-0.19	6.0-9.0	1.0-3.0
	54-67	25-35	4.00-11.00	0.10-0.21	2.6-6.0	0.1-1.0
Griffgulch very gravelly silt loam----------	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-7	18-27	4.00-9.00	0.08-0.17	1.0-3.0	6.0-9.0
	7-11	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	11-20	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	20-33	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	33-47	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	47-58	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	58	---	---	---	---	---
Rock outcrop, metavolcanic.						
581:						
Surnuf taxadjunct loam-------	0-1	---	---	---	---	---
	1-5	20-25	4.00-14.00	0.15-0.17	1.0-3.0	5.0-8.0
	5-11	22-40	4.00-14.00	0.11-0.21	1.0-9.0	3.0-6.0
	11-18	35-55	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	18-31	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	31-43	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	43-54	35-65	4.00-11.00	0.05-0.19	6.0-9.0	1.0-3.0
	54-67	25-35	4.00-11.00	0.10-0.21	2.6-6.0	0.1-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
581:						
Griffgulch very gravelly silt loam	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-7	18-27	4.00-9.00	0.08-0.17	1.0-3.0	6.0-9.0
	7-11	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	11-20	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	20-33	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	33-47	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	47-58	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	58	---	---	---	---	---
582:						
Surnuf taxadjunct loam	0-1	---	---	---	---	---
	1-5	20-25	4.00-14.00	0.15-0.17	1.0-3.0	5.0-8.0
	5-11	22-40	4.00-14.00	0.11-0.21	1.0-9.0	3.0-6.0
	11-18	35-55	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	18-31	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	31-43	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	43-54	35-65	4.00-11.00	0.05-0.19	6.0-9.0	1.0-3.0
	54-67	25-35	4.00-11.00	0.10-0.21	2.6-6.0	0.1-1.0
Griffgulch very gravelly silt loam	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-7	18-27	4.00-9.00	0.08-0.17	1.0-3.0	6.0-9.0
	7-11	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	11-20	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	20-33	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	33-47	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	47-58	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	58	---	---	---	---	---
583:						
Surnuf taxadjunct loam	0-1	---	---	---	---	---
	1-5	20-25	4.00-14.00	0.15-0.17	1.0-3.0	5.0-8.0
	5-11	22-40	4.00-14.00	0.11-0.21	1.0-9.0	3.0-6.0
	11-18	35-55	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	18-31	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	31-43	35-65	4.00-11.00	0.10-0.19	6.0-9.0	1.0-3.0
	43-54	35-65	4.00-11.00	0.05-0.19	6.0-9.0	1.0-3.0
	54-67	25-35	4.00-11.00	0.10-0.21	2.6-6.0	0.1-1.0
Griffgulch very gravelly silt loam	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-7	18-27	4.00-9.00	0.08-0.17	1.0-3.0	6.0-9.0
	7-11	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	11-20	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	20-33	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	33-47	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	47-58	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	58	---	---	---	---	---
584:						
Flanly loam	0-2	12-18	12.00-18.00	0.10-0.15	0.7-1.0	3.0-5.0
	2-5	15-20	12.00-17.00	0.10-0.16	0.7-1.0	1.0-3.0
	5-10	18-28	3.00-14.00	0.11-0.21	0.9-3.5	1.0-3.0
	10-23	22-35	2.00-12.00	0.14-0.17	1.5-6.0	0.5-2.0
	23-26	---	---	---	---	0.0-0.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
584:						
Swedesflat cobbly fine sandy loam	0-2	12-20	12.00-20.00	0.08-0.17	0.6-1.0	2.0-8.0
	2-8	13-20	12.00-19.00	0.07-0.16	0.6-1.0	1.5-3.0
	8-12	18-25	4.00-14.00	0.09-0.18	0.9-2.6	0.2-1.5
	12-18	---	---	---	---	---
	---	---	---	---	---	---
Rackerby very gravelly sandy loam	0-2	8-16	16.00-42.00	0.06-0.14	0.0-1.0	3.0-5.0
	2-5	10-20	12.00-30.00	0.06-0.13	0.5-1.0	1.5-3.0
	5-13	10-20	12.00-30.00	0.02-0.10	0.5-1.0	0.2-1.0
	13	---	---	---	---	---
585:						
Flanly loam	0-2	12-18	12.00-18.00	0.10-0.15	0.7-1.0	3.0-5.0
	2-5	15-20	12.00-17.00	0.10-0.16	0.7-1.0	1.0-3.0
	5-10	18-28	3.00-14.00	0.11-0.21	0.9-3.5	1.0-3.0
	10-23	22-35	2.00-12.00	0.14-0.17	1.5-6.0	0.5-2.0
	23-26	---	---	---	---	0.0-0.0
Sommeyflat loam	0-2	15-20	12.00-14.00	0.12-0.17	0.7-1.0	4.0-8.0
	2-9	14-21	12.00-14.00	0.11-0.17	0.7-1.5	1.0-4.0
	9-14	18-30	3.00-14.00	0.14-0.21	0.9-4.5	0.4-1.5
	14-24	22-33	2.50-12.00	0.15-0.21	1.6-5.0	0.2-1.0
	24-31	18-30	2.50-14.00	0.15-0.21	0.9-4.5	0.0-0.5
	31-62	16-22	4.00-16.00	0.11-0.17	0.8-2.0	0.0-0.0
	62-70	16-22	4.00-16.00	0.11-0.17	0.8-2.0	0.0-0.0
586:						
Sommeyflat loam	0-2	15-20	12.00-14.00	0.12-0.17	0.7-1.0	4.0-8.0
	2-9	14-21	12.00-14.00	0.11-0.17	0.7-1.5	1.0-4.0
	9-14	18-30	3.00-14.00	0.14-0.21	0.9-4.5	0.4-1.5
	14-24	22-33	2.50-12.00	0.15-0.21	1.6-5.0	0.2-1.0
	24-31	18-30	2.50-14.00	0.15-0.21	0.9-4.5	0.0-0.5
	31-62	16-22	4.00-16.00	0.11-0.17	0.8-2.0	0.0-0.0
	62-70	16-22	4.00-16.00	0.11-0.17	0.8-2.0	0.0-0.0
Mounthope loam	0-1	---	---	---	---	---
	1-3	17-25	4.00-14.00	0.11-0.18	1.0-3.0	1.0-3.5
	3-7	20-27	4.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	7-15	20-27	3.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	15-22	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.8-2.0
	22-26	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.5-1.0
	26-31	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.5-1.0
	31-42	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.2-1.0
	42-52	20-35	2.00-14.00	0.09-0.20	1.0-6.0	0.2-1.0
	52	---	---	---	---	---
587:						
Sommeyflat loam	0-2	15-20	12.00-14.00	0.12-0.17	0.7-1.0	4.0-8.0
	2-9	14-21	12.00-14.00	0.11-0.17	0.7-1.5	1.0-4.0
	9-14	18-30	3.00-14.00	0.14-0.21	0.9-4.5	0.4-1.5
	14-24	22-33	2.50-12.00	0.15-0.21	1.6-5.0	0.2-1.0
	24-31	18-30	2.50-14.00	0.15-0.21	0.9-4.5	0.0-0.5
	31-62	16-22	4.00-16.00	0.11-0.17	0.8-2.0	0.0-0.0
	62-70	16-22	4.00-16.00	0.11-0.17	0.8-2.0	0.0-0.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
587:						
Mounthope loam	0-1	---	---	---	---	---
	1-3	17-25	4.00-14.00	0.11-0.18	1.0-3.0	1.0-3.5
	3-7	20-27	4.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	7-15	20-27	3.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	15-22	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.8-2.0
	22-26	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.5-1.0
	26-31	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.5-1.0
	31-42	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.2-1.0
	42-52	20-35	2.00-14.00	0.09-0.20	1.0-6.0	0.2-1.0
	52	---	---	---	---	---
Hurleton gravelly sandy loam	0-3	10-17	14.00-30.00	0.07-0.14	0.5-1.0	3.0-8.0
	3-7	10-17	14.00-30.00	0.07-0.14	0.5-1.0	3.0-8.0
	7-12	14-20	14.00-18.00	0.07-0.10	0.7-1.0	1.2-3.0
	12-16	16-24	4.00-16.00	0.05-0.11	0.8-2.5	0.4-1.3
	16-19	19-32	3.00-14.00	0.05-0.14	0.9-5.0	0.2-0.6
	19-25	20-35	2.00-11.00	0.04-0.12	1.0-6.0	0.0-0.4
	25	---	---	---	---	---
588:						
Ultic Haploxeralfs, thermic, high terrace	0-2	14-17	14.00-18.00	0.08-0.14	1.0-3.0	1.0-3.5
	2-6	18-20	12.00-14.00	0.07-0.15	1.0-3.0	1.0-1.5
	6-12	20-30	4.00-14.00	0.05-0.17	1.0-3.0	0.5-1.0
	12-20	20-30	4.00-14.00	0.03-0.17	1.0-3.0	0.5-1.0
	20-32	26-37	1.40-6.00	0.05-0.18	1.0-3.0	0.2-0.5
	32-39	20-26	0.42-1.40	0.02-0.09	1.0-3.0	0.1-0.5
	39-50	20-26	0.42-1.40	0.02-0.09	1.0-3.0	0.1-0.5
589:						
Ultic Haploxeralfs, thermic, high terrace	0-2	14-17	14.00-18.00	0.08-0.14	1.0-3.0	1.0-3.5
	2-6	18-20	12.00-14.00	0.07-0.15	1.0-3.0	1.0-1.5
	6-12	20-30	4.00-14.00	0.05-0.17	1.0-3.0	0.5-1.0
	12-20	20-30	4.00-14.00	0.03-0.17	1.0-3.0	0.5-1.0
	20-32	26-37	1.40-6.00	0.05-0.18	1.0-3.0	0.2-0.5
	32-39	20-26	0.42-1.40	0.02-0.09	1.0-3.0	0.1-0.5
	39-50	20-26	0.42-1.40	0.02-0.09	1.0-3.0	0.1-0.5
590:						
Vistarobles sandy loam	0-5	16-26	4.00-16.00	0.09-0.18	0.8-3.0	1.0-2.0
	5-10	16-26	4.00-16.00	0.09-0.18	0.8-3.0	1.0-2.0
	10-14	40-50	0.80-1.40	0.10-0.16	7.0-9.0	0.4-1.0
	14-34	3-10	0.00-0.01	0.02-0.08	0.0-1.0	0.0-0.2
	34-40	3-15	17.00-100.00	0.02-0.12	0.0-1.0	0.0-0.2
Redding loam	0-4	12-26	6.00-20.00	0.10-0.17	0.5-3.0	1.0-2.0
	4-11	12-26	6.00-20.00	0.10-0.17	0.5-3.0	0.2-1.0
	11-24	15-26	6.00-17.00	0.08-0.18	0.5-3.0	0.1-0.5
	24-35	40-50	0.80-1.40	0.10-0.16	7.0-9.0	0.5-1.0
	35-40	---	0.00-0.01	---	---	0.0-0.2
Argonaut taxadjunct loam	0-2	18-30	3.00-14.00	0.14-0.19	0.9-4.0	2.0-6.0
	2-8	28-40	1.40-4.00	0.15-0.20	3.5-7.3	1.0-3.0
	8-14	40-50	0.80-1.40	0.12-0.16	7.0-9.0	1.0-2.0
	14-20	40-50	0.80-1.40	0.12-0.16	7.0-9.0	1.0-2.0
	20-26	36-45	1.20-2.00	0.14-0.18	6.0-9.0	0.0-1.0
	26-30	36-45	1.20-2.00	0.14-0.18	6.0-9.0	0.0-1.0
	30	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
590:						
Haploxererts gravelly silty clay	0-2	30-45	0.90-3.00	0.14-0.18	4.2-9.0	1.0-3.0
	2-10	45-60	0.42-0.90	0.12-0.14	9.0-13.7	0.5-1.5
	10-30	50-65	0.30-0.80	0.11-0.14	10.0-15.2	0.5-1.5
	30-33	40-55	0.60-1.40	0.13-0.16	7.0-12.0	0.0-0.5
	33-41	40-55	0.60-1.40	0.13-0.16	7.0-12.0	0.0-0.5
	41-44	---	---	---	---	---
603:						
Oroville gravelly fine sandy loam	0-2	15-24	10.00-17.00	0.10-0.14	0.7-2.5	0.5-2.0
	2-6	18-25	8.00-14.00	0.10-0.17	0.9-2.5	0.2-0.8
	6-13	22-35	2.00-12.00	0.08-0.20	1.5-6.0	0.1-0.5
	13-17	45-52	0.80-1.00	0.07-0.16	6.0-9.0	0.1-0.3
	17-23	45-52	0.80-1.00	0.07-0.16	6.0-9.0	0.0-0.3
	23-31	---	0.00-0.01	---	---	---
	31-60	---	0.00-0.01	---	---	---
Thermalito sandy loam	0-2	12-20	14.00-30.00	0.08-0.16	0.5-1.0	0.5-2.0
	2-6	18-33	1.00-14.00	0.09-0.16	0.9-5.0	0.1-0.5
	6-12	18-33	1.00-14.00	0.10-0.17	0.9-5.0	0.1-0.5
	12-18	18-33	1.00-14.00	0.10-0.20	0.9-5.0	0.1-0.5
	18-23	18-33	1.00-14.00	0.10-0.20	0.9-5.0	0.1-0.5
	23-25	18-33	1.00-14.00	0.10-0.20	0.9-5.0	0.1-0.5
	25-29	43-50	0.90-1.40	0.09-0.16	8.0-9.0	0.0-0.3
	29-32	43-50	0.90-1.40	0.09-0.16	8.0-9.0	0.0-0.3
	32-60	---	0.00-0.01	---	---	---
Fernandez sandy loam	0-2	15-18	14.00-17.00	0.09-0.15	0.7-3.0	0.5-1.2
	2-6	18-30	3.00-14.00	0.09-0.17	0.9-4.0	0.1-0.5
	6-18	18-30	3.00-14.00	0.09-0.17	0.9-4.0	0.1-0.5
	18-28	35-50	1.40-2.00	0.10-0.19	6.0-9.0	0.1-0.3
	28-44	35-50	1.40-2.00	0.10-0.19	6.0-9.0	0.1-0.3
	44-57	35-50	0.90-1.40	0.08-0.19	6.0-9.0	0.1-0.3
	57-65	35-50	0.90-1.40	0.08-0.19	6.0-9.0	0.1-0.3
	65-73	35-50	0.90-1.80	0.08-0.19	6.0-9.0	0.1-0.3
	73-85	---	0.01-0.42	---	---	---
Thompsonflat fine sandy loam	0-3	12-22	12.00-20.00	0.09-0.17	0.6-1.6	0.5-1.2
	3-7	18-38	1.60-14.00	0.11-0.18	0.9-7.0	0.1-0.5
	7-11	18-38	1.60-14.00	0.09-0.17	0.9-7.0	0.1-0.5
	11-15	18-38	1.60-14.00	0.11-0.17	0.9-7.0	0.1-0.5
	15-22	38-55	0.60-1.60	0.05-0.16	6.0-9.0	0.1-0.5
	22-35	5-38	1.40-4.00	0.02-0.17	0.0-7.0	0.0-0.3
	35-45	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3
	45-53	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3
	53-66	5-38	1.40-4.00	0.02-0.11	0.0-7.0	0.0-0.3
	66-80	5-38	1.40-4.00	0.01-0.11	0.0-7.0	0.0-0.3
605:						
Duric Xerarents fine sandy loam, leveled	0-5	10-35	2.00-30.00	0.07-0.19	0.5-6.0	0.0-2.0
	5-12	12-50	0.90-20.00	0.06-0.15	0.6-9.0	0.0-2.0
	12-18	---	0.00-0.01	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
605:						
Oroville gravelly fine sandy loam	0-2	15-24	10.00-17.00	0.10-0.14	0.7-2.5	0.5-2.0
	2-6	18-25	8.00-14.00	0.10-0.17	0.9-2.5	0.2-0.8
	6-13	22-35	2.00-12.00	0.08-0.20	1.5-6.0	0.1-0.5
	13-17	45-52	0.80-1.00	0.07-0.16	6.0-9.0	0.1-0.3
	17-23	45-52	0.80-1.00	0.07-0.16	6.0-9.0	0.0-0.3
	23-31	---	0.00-0.01	---	---	---
	31-60	---	0.00-0.01	---	---	---
606:						
Redtough loam	0-1	15-22	6.00-10.00	0.10-0.17	1.0-2.0	1.0-4.0
	1-7	18-27	4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0
	7-13	18-27	4.00-9.00	0.10-0.17	1.0-4.0	0.5-1.0
	13	---	0.00-0.01	---	---	---
Fallager loam	0-1	20-30	2.00-8.00	0.14-0.20	2.0-4.5	3.0-8.0
	1-3	35-40	1.40-3.00	0.14-0.18	6.0-7.7	0.5-3.0
	3-7	40-60	0.42-1.40	0.09-0.14	7.5-13.0	0.5-3.0
	7	---	0.00-0.01	---	---	---
Anita, gravelly duripan	0-3	40-60	0.42-1.40	0.10-0.15	9.0-13.5	2.0-5.0
	3-8	40-60	0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0
	8-15	40-60	0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0
	15	---	0.00-0.01	---	---	---
609:						
Anita, gravelly duripan	0-3	40-60	0.42-1.40	0.10-0.15	9.0-13.5	2.0-5.0
	3-8	40-60	0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0
	8-15	40-60	0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0
	15	---	0.00-0.01	---	---	---
Tuscan taxadjunct gravelly clay loam	0-2	18-30	2.50-14.00	0.10-0.19	0.9-6.0	2.0-5.0
	2-5	25-46	1.20-8.00	0.10-0.19	2.0-9.0	0.8-1.2
	5-13	35-46	1.20-2.00	0.10-0.17	6.0-9.0	0.5-0.8
	13-23	35-46	1.20-2.00	0.10-0.17	6.0-9.0	0.5-0.8
	23-29	35-46	1.20-2.00	0.03-0.16	6.0-9.0	0.0-0.5
	29	---	0.00-0.01	---	---	---
614:						
Doemill gravelly loam	0-1	15-24	5.00-10.00	0.11-0.17	1.0-3.0	3.0-6.0
	1-5	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	5-9	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	9-14	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	14	---	---	---	---	---
Jokerst very cobbly loam	0-1	12-21	6.00-12.00	0.06-0.14	1.0-2.0	2.0-5.0
	1-4	16-25	5.00-8.00	0.10-0.16	1.0-3.0	0.5-2.0
	4	---	---	---	---	---
615:						
Doemill gravelly loam	0-1	15-24	5.00-10.00	0.11-0.17	1.0-3.0	3.0-6.0
	1-5	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	5-9	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	9-14	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	14	---	---	---	---	---
Jokerst very cobbly loam	0-1	12-21	6.00-12.00	0.06-0.14	1.0-2.0	2.0-5.0
	1-4	16-25	5.00-8.00	0.10-0.16	1.0-3.0	0.5-2.0
	4	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
616:						
Jokerst very cobbly loam-----	0-1	12-21	6.00-12.00	0.06-0.14	1.0-2.0	2.0-5.0
	1-4	16-25	5.00-8.00	0.10-0.16	1.0-3.0	0.5-2.0
	4	---	---	---	---	---
Doemill gravelly loam--------	0-1	15-24	5.00-10.00	0.11-0.17	1.0-3.0	3.0-6.0
	1-5	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	5-9	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	9-14	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	14	---	---	---	---	---
Typic Haploxeralfs gravelly loam------------------------	0-2	20-30	2.00-8.00	0.09-0.20	2.0-4.5	2.0-6.0
	2-8	27-50	0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0
	8-16	27-50	0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0
	16-27	27-50	0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0
	27-40	27-50	0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0
	40	---	---	---	---	---
617:						
Doemill gravelly loam--------	0-1	15-24	5.00-10.00	0.11-0.17	1.0-3.0	3.0-6.0
	1-5	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	5-9	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	9-14	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	14	---	---	---	---	---
Jokerst very cobbly loam-----	0-1	12-21	6.00-12.00	0.06-0.14	1.0-2.0	2.0-5.0
	1-4	16-25	5.00-8.00	0.10-0.16	1.0-3.0	0.5-2.0
	4	---	---	---	---	---
Typic Haploxeralfs gravelly loam------------------------	0-2	20-30	2.00-8.00	0.09-0.20	2.0-4.5	2.0-6.0
	2-8	27-50	0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0
	8-16	27-50	0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0
	16-27	27-50	0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0
	27-40	27-50	0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0
	40	---	---	---	---	---
619:						
Carhart taxadjunct clay------	0-4	50-60	0.42-1.40	0.08-0.14	10.5-13.5	2.0-5.0
	4-11	40-60	0.42-1.40	0.04-0.15	7.5-13.5	0.5-2.0
	11-17	40-60	0.42-1.40	0.04-0.15	7.5-13.5	0.5-2.0
	17	---	---	---	---	---
620:						
Doemill gravelly loam--------	0-1	15-24	5.00-10.00	0.11-0.17	1.0-3.0	3.0-6.0
	1-5	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	5-9	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	9-14	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	14	---	---	---	---	---
Jokerst very cobbly loam-----	0-1	12-21	6.00-12.00	0.06-0.14	1.0-2.0	2.0-5.0
	1-4	16-25	5.00-8.00	0.10-0.16	1.0-3.0	0.5-2.0
	4	---	---	---	---	---
Ultic Haploxeralfs, thermic, gravelly loam----------	0-2	18-27	4.00-7.00	0.10-0.16	2.0-3.0	5.0-10
	2-6	20-39	1.40-6.00	0.04-0.16	2.0-7.5	1.0-3.0
	6-13	20-39	1.40-6.00	0.04-0.16	2.0-7.5	1.0-3.0
	13-21	20-39	1.40-6.00	0.04-0.16	2.0-7.5	1.0-3.0
	21-31	20-39	1.40-6.00	0.04-0.16	2.0-7.5	0.5-1.0
	31	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
621:						
Doemill gravelly loam--------	0-1	15-24	5.00-10.00	0.11-0.17	1.0-3.0	3.0-6.0
	1-5	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	5-9	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	9-14	18-30	3.00-9.00	0.09-0.21	2.0-4.5	0.5-1.0
	14	---	---	---	---	---
Jokerst very cobbly loam-----	0-1	12-21	6.00-12.00	0.06-0.14	1.0-2.0	2.0-5.0
	1-4	16-25	5.00-8.00	0.10-0.16	1.0-3.0	0.5-2.0
	4	---	---	---	---	---
Ultic Haploxeralfs, thermic, gravelly loam----------	0-2	18-27	4.00-7.00	0.10-0.16	2.0-3.0	5.0-10
	2-6	20-39	1.40-6.00	0.04-0.16	2.0-7.5	1.0-3.0
	6-13	20-39	1.40-6.00	0.04-0.16	2.0-7.5	1.0-3.0
	13-21	20-39	1.40-6.00	0.04-0.16	2.0-7.5	1.0-3.0
	21-31	20-39	1.40-6.00	0.04-0.16	2.0-7.5	0.5-1.0
	31	---	---	---	---	---
622:						
Xerorthents, shallow---------	0-2	18-35	1.40-14.00	0.08-0.21	2.0-6.0	2.0-6.0
	2-5	23-42	1.40-5.00	0.07-0.21	2.0-8.0	0.4-4.0
	5-8	23-42	1.40-5.00	0.07-0.21	2.0-8.0	0.4-4.0
	8	---	---	---	---	---
Typic Haploxeralfs gravelly loam------------------------	0-2	20-30	2.00-8.00	0.09-0.20	2.0-4.5	2.0-6.0
	2-8	27-50	0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0
	8-16	27-50	0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0
	16-27	27-50	0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0
	27-40	27-50	0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0
	40	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.						
623:						
Xerorthents, shallow---------	0-2	18-35	1.40-14.00	0.08-0.21	2.0-6.0	2.0-6.0
	2-5	23-42	1.40-5.00	0.07-0.21	2.0-8.0	0.4-4.0
	5-8	23-42	1.40-5.00	0.07-0.21	2.0-8.0	0.4-4.0
	8	---	---	---	---	---
Typic Haploxeralfs gravelly loam------------------------	0-2	20-30	2.00-8.00	0.09-0.20	2.0-4.5	2.0-6.0
	2-8	27-50	0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0
	8-16	27-50	0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0
	16-27	27-50	0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0
	27-40	27-50	0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0
	40	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.						
624:						
Ultic Haploxeralfs, mesic, gravelly loam----------	0-1	---	---	---	---	---
	1-4	20-26	4.00-8.00	0.10-0.18	2.0-3.0	5.0-10
	4-9	25-35	1.40-4.00	0.10-0.21	3.0-6.0	1.0-4.0
	9-23	25-35	1.40-4.00	0.10-0.21	3.0-6.0	1.0-4.0
	23-32	25-35	1.40-4.00	0.10-0.21	3.0-6.0	1.0-4.0
	32-42	35-50	0.42-2.00	0.04-0.18	6.0-10.0	0.5-2.0
	42	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
624:						
Rockstripe very gravelly loam	0-2	15-25	4.00-21.00	0.06-0.12	1.0-3.0	2.0-8.0
	2-6	17-27	4.00-20.00	0.03-0.14	1.0-3.0	0.5-3.0
	6-9	17-27	4.00-20.00	0.03-0.14	1.0-3.0	0.5-3.0
	9	---	---	---	---	---
625:						
Ultic Haploxeralfs, mesic, gravelly loam	0-1	---	---	---	---	---
	1-4	20-26	4.00-8.00	0.10-0.18	2.0-3.0	5.0-10
	4-9	25-35	1.40-4.00	0.10-0.21	3.0-6.0	1.0-4.0
	9-23	25-35	1.40-4.00	0.10-0.21	3.0-6.0	1.0-4.0
	23-32	25-35	1.40-4.00	0.10-0.21	3.0-6.0	1.0-4.0
	32-42	35-50	0.42-2.00	0.04-0.18	6.0-10.0	0.5-2.0
	42	---	---	---	---	---
Rockstripe very gravelly loam	0-2	15-25	4.00-21.00	0.06-0.12	1.0-3.0	2.0-8.0
	2-6	17-27	4.00-20.00	0.03-0.14	1.0-3.0	0.5-3.0
	6-9	17-27	4.00-20.00	0.03-0.14	1.0-3.0	0.5-3.0
	9	---	---	---	---	---
626:						
Ultic Haploxeralfs gravelly loam	0-4	20-26	4.00-8.00	0.10-0.15	2.0-3.0	5.0-10
	4-10	23-35	1.40-7.00	0.10-0.20	2.0-6.0	1.0-5.0
	10-18	23-35	1.40-7.00	0.10-0.20	2.0-6.0	1.0-5.0
	18-35	35-50	0.42-2.00	0.07-0.16	6.0-10.0	1.0-2.0
	35-48	35-50	0.42-2.00	0.07-0.16	6.0-10.0	1.0-2.0
	48	---	---	---	---	---
Rockstripe very gravelly loam	0-2	15-25	4.00-21.00	0.06-0.12	1.0-3.0	2.0-8.0
	2-6	17-27	4.00-20.00	0.03-0.14	1.0-3.0	0.5-3.0
	6-9	17-27	4.00-20.00	0.03-0.14	1.0-3.0	0.5-3.0
	9	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.						
627:						
Ultic Haploxeralfs gravelly loam	0-4	20-26	4.00-8.00	0.10-0.15	2.0-3.0	5.0-10
	4-10	23-35	1.40-7.00	0.10-0.20	2.0-6.0	1.0-5.0
	10-18	23-35	1.40-7.00	0.10-0.20	2.0-6.0	1.0-5.0
	18-35	35-50	0.42-2.00	0.07-0.16	6.0-10.0	1.0-2.0
	35-48	35-50	0.42-2.00	0.07-0.16	6.0-10.0	1.0-2.0
	48	---	---	---	---	---
Rockstripe very gravelly loam	0-2	15-25	4.00-21.00	0.06-0.12	1.0-3.0	2.0-8.0
	2-6	17-27	4.00-20.00	0.03-0.14	1.0-3.0	0.5-3.0
	6-9	17-27	4.00-20.00	0.03-0.14	1.0-3.0	0.5-3.0
	9	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.						

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
628:						
Rockstripe very gravelly loam	0-2	15-25	4.00-21.00	0.06-0.12	1.0-3.0	2.0-8.0
	2-6	17-27	4.00-20.00	0.03-0.14	1.0-3.0	0.5-3.0
	6-9	17-27	4.00-20.00	0.03-0.14	1.0-3.0	0.5-3.0
	9	---	---	---	---	---
Ultic Haploxeralfs gravelly loam	0-4	20-26	4.00-8.00	0.10-0.15	2.0-3.0	5.0-10
	4-10	23-35	1.40-7.00	0.10-0.20	2.0-6.0	1.0-5.0
	10-18	23-35	1.40-7.00	0.10-0.20	2.0-6.0	1.0-5.0
	18-35	35-50	0.42-2.00	0.07-0.16	6.0-10.0	1.0-2.0
	35-48	35-50	0.42-2.00	0.07-0.16	6.0-10.0	1.0-2.0
	48	---	---	---	---	---
Rock outcrop, mudflow-breccia cliffs.						
629:						
Slideland gravelly loam	0-2	18-27	4.00-16.00	0.11-0.18	2.0-3.0	5.0-14
	2-9	20-35	2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0
	9-14	20-35	2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0
	14-21	20-35	2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0
	21-28	20-35	2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0
	28-38	35-50	0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0
	38-51	35-50	0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0
	51-69	35-50	0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0
	69-80	35-50	0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0
630:						
Slideland gravelly loam	0-2	18-27	4.00-16.00	0.11-0.18	2.0-3.0	5.0-14
	2-9	20-35	2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0
	9-14	20-35	2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0
	14-21	20-35	2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0
	21-28	20-35	2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0
	28-38	35-50	0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0
	38-51	35-50	0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0
	51-69	35-50	0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0
	69-80	35-50	0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0
631:						
Slideland gravelly loam	0-2	18-27	4.00-16.00	0.11-0.18	2.0-3.0	5.0-14
	2-9	20-35	2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0
	9-14	20-35	2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0
	14-21	20-35	2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0
	21-28	20-35	2.00-6.00	0.12-0.20	2.0-6.0	1.0-6.0
	28-38	35-50	0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0
	38-51	35-50	0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0
	51-69	35-50	0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0
	69-80	35-50	0.50-2.00	0.08-0.18	6.0-10.5	0.2-1.0
632:						
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	---	---	---
	2-6	23-30	1.40-6.00	0.08-0.18	2.0-4.5	5.0-10
	6-10	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	10-17	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	17-28	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	28-40	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	40-50	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0
	50-71	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0
	71-84	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
632:						
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	---	---	---	---	---
	2-5	23-27	4.00-6.00	0.07-0.12	2.0-4.0	5.0-10
	5-10	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0
	10-25	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0
	25	---	---	---	---	---
633:						
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	---	---	---
	2-6	23-30	1.40-6.00	0.08-0.18	2.0-4.5	5.0-10
	6-10	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	10-17	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	17-28	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	28-40	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	40-50	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0
	50-71	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0
	71-84	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	---	---	---	---	---
	2-5	23-27	4.00-6.00	0.07-0.12	2.0-4.0	5.0-10
	5-10	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0
	10-25	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0
	25	---	---	---	---	---
634:						
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	---	---	---
	2-6	23-30	1.40-6.00	0.08-0.18	2.0-4.5	5.0-10
	6-10	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	10-17	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	17-28	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	28-40	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	40-50	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0
	50-71	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0
	71-84	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	---	---	---	---	---
	2-5	23-27	4.00-6.00	0.07-0.12	2.0-4.0	5.0-10
	5-10	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0
	10-25	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0
	25	---	---	---	---	---
635:						
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	---	---	---
	2-6	23-30	1.40-6.00	0.08-0.18	2.0-4.5	5.0-10
	6-10	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	10-17	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	17-28	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	28-40	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	40-50	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0
	50-71	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0
	71-84	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
635:						
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	---	---	---	---	---
	2-5	23-27	4.00-6.00	0.07-0.12	2.0-4.0	5.0-10
	5-10	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0
	10-25	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0
	25	---	---	---	---	---
636:						
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	---	---	---	---	---
	2-5	23-27	4.00-6.00	0.07-0.12	2.0-4.0	5.0-10
	5-10	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0
	10-25	27-35	1.40-4.00	0.04-0.14	4.0-6.0	0.5-5.0
	25	---	---	---	---	---
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	---	---	---
	2-6	23-30	1.40-6.00	0.08-0.18	2.0-4.5	5.0-10
	6-10	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	10-17	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	17-28	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	28-40	25-40	1.40-4.00	0.05-0.19	3.0-7.5	1.0-5.0
	40-50	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0
	50-71	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0
	71-84	29-50	0.42-3.00	0.04-0.17	4.5-10.0	0.2-1.0
637:						
Ultic Haploxeralfs, sandstone	0-0.5	---	---	---	---	---
	0.5-2	10-26	4.00-14.00	0.09-0.18	0.5-3.0	2.0-6.0
	2-6	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	6-11	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	11-17	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	17-24	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	24-32	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	32-53	10-30	4.00-14.00	0.01-0.13	0.5-3.0	0.1-0.5
	53-65	---	---	---	---	---
	65	---	---	---	---	---
638:						
Ultic Haploxeralfs, sandstone	0-0.5	---	---	---	---	---
	0.5-2	10-26	4.00-14.00	0.09-0.18	0.5-3.0	2.0-6.0
	2-6	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	6-11	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	11-17	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	17-24	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	24-32	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	32-53	10-30	4.00-14.00	0.01-0.13	0.5-3.0	0.1-0.5
	53-65	---	---	---	---	---
	65	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
639:						
Ultic Haploxeralfs, sandstone	0-0.5	---	---	---	---	---
	0.5-2	10-26	4.00-14.00	0.09-0.18	0.5-3.0	2.0-6.0
	2-6	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	6-11	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	11-17	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	17-24	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	24-32	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	32-53	10-30	4.00-14.00	0.01-0.13	0.5-3.0	0.1-0.5
	53-65	---	---	---	---	---
	65	---	---	---	---	---
640:						
Ultic Haploxeralfs, sandstone	0-0.5	---	---	---	---	---
	0.5-2	10-26	4.00-14.00	0.09-0.18	0.5-3.0	2.0-6.0
	2-6	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	6-11	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	11-17	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	17-24	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	24-32	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	32-53	10-30	4.00-14.00	0.01-0.13	0.5-3.0	0.1-0.5
	53-65	---	---	---	---	---
	65	---	---	---	---	---
641:						
Ultic Haploxeralfs, sandstone	0-0.5	---	---	---	---	---
	0.5-2	10-26	4.00-14.00	0.09-0.18	0.5-3.0	2.0-6.0
	2-6	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	6-11	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	11-17	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	17-24	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	24-32	10-30	4.00-14.00	0.06-0.18	0.5-3.0	0.2-2.0
	32-53	10-30	4.00-14.00	0.01-0.13	0.5-3.0	0.1-0.5
	53-65	---	---	---	---	---
	65	---	---	---	---	---
642:						
Chinacamp gravelly loam------	0-1	---	---	---	---	---
	1-5	20-26	1.40-14.00	0.05-0.15	3.0-6.0	8.0-14
	5-15	27-42	0.42-4.00	0.03-0.15	3.0-6.0	1.0-8.0
	15-29	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0
	29-38	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	38-44	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	44-61	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	61-72	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0
643:						
Chinacamp gravelly loam------	0-1	---	---	---	---	---
	1-5	20-26	1.40-14.00	0.05-0.15	3.0-6.0	8.0-14
	5-15	27-42	0.42-4.00	0.03-0.15	3.0-6.0	1.0-8.0
	15-29	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0
	29-38	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	38-44	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	44-61	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	61-72	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
644:						
Chinacamp gravelly loam------	0-1	---	---	---	---	---
	1-5	20-26	1.40-14.00	0.05-0.15	3.0-6.0	8.0-14
	5-15	27-42	0.42-4.00	0.03-0.15	3.0-6.0	1.0-8.0
	15-29	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0
	29-38	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	38-44	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	44-61	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	61-72	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0
645:						
Chinacamp gravelly loam------	0-1	---	---	---	---	---
	1-5	20-26	1.40-14.00	0.05-0.15	3.0-6.0	8.0-14
	5-15	27-42	0.42-4.00	0.03-0.15	3.0-6.0	1.0-8.0
	15-29	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0
	29-38	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	38-44	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	44-61	27-42	0.42-4.00	0.03-0.15	6.0-9.0	0.2-2.0
	61-72	27-42	0.42-4.00	0.03-0.15	3.0-6.0	0.2-2.0
646:						
Coalcanyon taxadjunct very gravelly loam---------------	0-2	20-27	4.00-8.00	0.03-0.12	2.0-4.0	4.0-10
	2-6	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	6-14	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	14-24	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	24-42	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	42-54	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0
	54-72	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0
647:						
Coalcanyon taxadjunct very gravelly loam---------------	0-2	20-27	4.00-8.00	0.03-0.12	2.0-4.0	4.0-10
	2-6	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	6-14	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	14-24	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	24-42	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	42-54	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0
	54-72	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0
648:						
Coalcanyon taxadjunct very gravelly loam---------------	0-2	20-27	4.00-8.00	0.03-0.12	2.0-4.0	4.0-10
	2-6	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	6-14	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	14-24	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	24-42	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	42-54	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0
	54-72	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0
649:						
Coalcanyon taxadjunct very gravelly loam---------------	0-2	20-27	4.00-8.00	0.03-0.12	2.0-4.0	4.0-10
	2-6	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	6-14	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	14-24	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	24-42	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	42-54	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0
	54-72	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
650:						
Schott very gravelly loam----	0-2	---	---	---	---	---
	2-6	15-25	4.00-21.00	0.07-0.16	1.0-3.0	6.0-10
	6-13	18-35	1.40-20.00	0.03-0.14	1.0-6.0	2.0-6.0
	13-22	18-35	1.40-20.00	0.03-0.14	1.0-6.0	2.0-6.0
	22-40	18-35	1.40-20.00	0.03-0.14	1.0-6.0	0.5-2.0
	40-50	18-35	1.40-20.00	0.03-0.14	1.0-6.0	0.5-2.0
	50	---	---	---	---	---
651:						
Schott very gravelly loam----	0-2	---	---	---	---	---
	2-6	15-25	4.00-21.00	0.07-0.16	1.0-3.0	6.0-10
	6-13	18-35	1.40-20.00	0.03-0.14	1.0-6.0	2.0-6.0
	13-22	18-35	1.40-20.00	0.03-0.14	1.0-6.0	2.0-6.0
	22-40	18-35	1.40-20.00	0.03-0.14	1.0-6.0	0.5-2.0
	40-50	18-35	1.40-20.00	0.03-0.14	1.0-6.0	0.5-2.0
	50	---	---	---	---	---
652:						
Schott very gravelly loam----	0-2	---	---	---	---	---
	2-6	15-25	4.00-21.00	0.07-0.16	1.0-3.0	6.0-10
	6-13	18-35	1.40-20.00	0.03-0.14	1.0-6.0	2.0-6.0
	13-22	18-35	1.40-20.00	0.03-0.14	1.0-6.0	2.0-6.0
	22-40	18-35	1.40-20.00	0.03-0.14	1.0-6.0	0.5-2.0
	40-50	18-35	1.40-20.00	0.03-0.14	1.0-6.0	0.5-2.0
	50	---	---	---	---	---
Rock outcrop, mudflow breccia.						
654:						
Coridge bouldery loam--------	0-1	20-27	4.00-14.00	0.08-0.15	1.0-3.0	2.0-6.0
	1-6	25-35	2.00-14.00	0.08-0.16	3.0-6.0	0.3-2.0
	6-12	25-35	2.00-14.00	0.08-0.16	3.0-6.0	0.3-2.0
	12-19	25-35	2.00-14.00	0.08-0.16	3.0-6.0	0.3-2.0
	19-24	35-50	0.42-2.00	0.07-0.12	6.0-10.0	0.1-0.3
	24	---	---	---	---	---
Rock outcrop, Cohasset basalt.						
655:						
Coridge bouldery loam--------	0-1	20-27	4.00-14.00	0.08-0.15	1.0-3.0	2.0-6.0
	1-6	25-35	2.00-14.00	0.08-0.16	3.0-6.0	0.3-2.0
	6-12	25-35	2.00-14.00	0.08-0.16	3.0-6.0	0.3-2.0
	12-19	25-35	2.00-14.00	0.08-0.16	3.0-6.0	0.3-2.0
	19-24	35-50	0.42-2.00	0.07-0.12	6.0-10.0	0.1-0.3
	24	---	---	---	---	---
Rock outcrop, Cohasset basalt.						

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
656:						
Rock outcrop, basalt cliffs.						
Coalcanyon taxadjunct very gravelly loam	0-2	20-27	4.00-8.00	0.03-0.12	2.0-4.0	4.0-10
	2-6	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	6-14	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	14-24	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	24-42	23-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-5.0
	42-54	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0
	54-72	30-50	0.50-3.00	0.03-0.12	4.5-10.0	0.3-1.0
657:						
Bonneyridge sandy loam	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
Chawanakee gravelly sandy loam	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
Rock outcrop, quartz diorite.						
658:						
Bonneyridge sandy loam	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
Chawanakee gravelly sandy loam	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
Rock outcrop, quartz diorite.						

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
659:						
Bonneyridge sandy loam-------	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
Chawanakee gravelly sandy loam------------------------	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
Rock outcrop, quartz diorite.						
660:						
Bonneyridge sandy loam-------	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
Chawanakee gravelly sandy loam------------------------	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
Rock outcrop, quartz diorite.						
661:						
Millerridge gravelly sandy clay loam-------------------	0-2	20-27	2.70-7.00	0.10-0.15	2.0-3.0	5.0-8.0
	2-6	27-35	1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0
	6-12	27-35	1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0
	12-20	30-50	0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0
	20-26	30-50	0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0
	26	---	---	---	---	---
Boxrobber cobbly sandy clay loam------------------------	0-2	22-30	1.40-14.00	0.10-0.15	1.0-3.0	5.0-8.0
	2-8	27-35	1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0
	8-16	27-35	1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0
	16-30	---	---	---	---	---
	30	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
662:						
Millerridge gravelly sandy clay loam	0-2	20-27	2.70-7.00	0.10-0.15	2.0-3.0	5.0-8.0
	2-6	27-35	1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0
	6-12	27-35	1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0
	12-20	30-50	0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0
	20-26	30-50	0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0
	26	---	---	---	---	---
Boxrobber cobbly sandy clay loam	0-2	22-30	1.40-14.00	0.10-0.15	1.0-3.0	5.0-8.0
	2-8	27-35	1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0
	8-16	27-35	1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0
	16-30	---	---	---	---	---
	30	---	---	---	---	---
663:						
Millerridge gravelly sandy clay loam	0-2	20-27	2.70-7.00	0.10-0.15	2.0-3.0	5.0-8.0
	2-6	27-35	1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0
	6-12	27-35	1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0
	12-20	30-50	0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0
	20-26	30-50	0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0
	26	---	---	---	---	---
Boxrobber cobbly sandy clay loam	0-2	22-30	1.40-14.00	0.10-0.15	1.0-3.0	5.0-8.0
	2-8	27-35	1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0
	8-16	27-35	1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0
	16-30	---	---	---	---	---
	30	---	---	---	---	---
664:						
Millerridge gravelly sandy clay loam	0-2	20-27	2.70-7.00	0.10-0.15	2.0-3.0	5.0-8.0
	2-6	27-35	1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0
	6-12	27-35	1.40-4.00	0.09-0.18	3.0-6.0	1.0-5.0
	12-20	30-50	0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0
	20-26	30-50	0.90-3.00	0.08-0.17	4.5-10.0	0.5-2.0
	26	---	---	---	---	---
Boxrobber cobbly sandy clay loam	0-2	22-30	1.40-14.00	0.10-0.15	1.0-3.0	5.0-8.0
	2-8	27-35	1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0
	8-16	27-35	1.40-4.00	0.06-0.14	3.0-6.0	1.0-5.0
	16-30	---	---	---	---	---
	30	---	---	---	---	---
665:						
Surnuf gravelly loam	0-1	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
665:						
Bigridge loam	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
666:						
Surnuf gravelly loam	0-1	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
Bigridge loam	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
667:						
Surnuf gravelly loam	0-1	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
Bigridge loam	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
668:						
Surnuf gravelly loam	0-1	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
668:						
Bigridge loam	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
669:						
Oroshore gravelly loam	0-2	20-27	4.00-7.00	0.09-0.16	2.0-4.0	2.0-6.0
	2-15	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	15-28	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	28-34	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	---	---	---	---	---	---
Mounthope loam	0-1	---	---	---	---	---
	1-3	17-25	4.00-14.00	0.11-0.18	1.0-3.0	1.0-3.5
	3-7	20-27	4.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	7-15	20-27	3.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	15-22	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.8-2.0
	22-26	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.5-1.0
	26-31	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.5-1.0
	31-42	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.2-1.0
	42-52	20-35	2.00-14.00	0.09-0.20	1.0-6.0	0.2-1.0
	---	---	---	---	---	---
Dunstone gravelly loam	0-4	12-20	12.00-20.00	0.12-0.17	0.6-1.0	5.0-8.0
	4-6	14-22	12.00-18.00	0.11-0.17	0.7-2.0	1.0-2.0
	6-10	15-27	4.00-13.00	0.10-0.20	0.7-3.0	1.0-2.0
	10-15	18-35	2.00-14.00	0.10-0.20	0.9-6.0	0.5-1.5
	15-37	---	---	---	---	---
	37	---	---	---	---	---
670:						
Oroshore gravelly loam	0-2	20-27	4.00-7.00	0.09-0.16	2.0-4.0	2.0-6.0
	2-15	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	15-28	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	28-34	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	34	---	---	---	---	---
Mounthope loam	0-1	---	---	---	---	---
	1-3	17-25	4.00-14.00	0.11-0.18	1.0-3.0	1.0-3.5
	3-7	20-27	4.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	7-15	20-27	3.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	15-22	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.8-2.0
	22-26	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.5-1.0
	26-31	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.5-1.0
	31-42	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.2-1.0
	42-52	20-35	2.00-14.00	0.09-0.20	1.0-6.0	0.2-1.0
	52	---	---	---	---	---
Dunstone gravelly loam	0-4	12-20	12.00-20.00	0.12-0.17	0.6-1.0	5.0-8.0
	4-6	14-22	12.00-18.00	0.11-0.17	0.7-2.0	1.0-2.0
	6-10	15-27	4.00-13.00	0.10-0.20	0.7-3.0	1.0-2.0
	10-15	18-35	2.00-14.00	0.10-0.20	0.9-6.0	0.5-1.5
	15-37	---	---	---	---	---
	37	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
671:						
Oroshore gravelly loam-------	0-2	20-27	4.00-7.00	0.09-0.16	2.0-4.0	2.0-6.0
	2-15	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	15-28	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	28-34	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	34	---	---	---	---	---
Mounthope loam---------------	0-1	---	---	---	---	---
	1-3	17-25	4.00-14.00	0.11-0.18	1.0-3.0	1.0-3.5
	3-7	20-27	4.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	7-15	20-27	3.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	15-22	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.8-2.0
	22-26	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.5-1.0
	26-31	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.5-1.0
	31-42	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.2-1.0
	42-52	20-35	2.00-14.00	0.09-0.20	1.0-6.0	0.2-1.0
	52	---	---	---	---	---
Dunstone gravelly loam-------	0-4	12-20	12.00-20.00	0.12-0.17	0.6-1.0	5.0-8.0
	4-6	14-22	12.00-18.00	0.11-0.17	0.7-2.0	1.0-2.0
	6-10	15-27	4.00-13.00	0.10-0.20	0.7-3.0	1.0-2.0
	10-15	18-35	2.00-14.00	0.10-0.20	0.9-6.0	0.5-1.5
	15-37	---	---	---	---	---
	37	---	---	---	---	---
672:						
Oroshore gravelly loam-------	0-2	20-27	4.00-7.00	0.09-0.16	2.0-4.0	2.0-6.0
	2-15	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	15-28	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	28-34	27-39	1.40-4.00	0.04-0.18	4.0-7.5	0.5-2.0
	34	---	---	---	---	---
Mounthope loam---------------	0-1	---	---	---	---	---
	1-3	17-25	4.00-14.00	0.11-0.18	1.0-3.0	1.0-3.5
	3-7	20-27	4.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	7-15	20-27	3.00-14.00	0.15-0.18	1.0-3.0	1.0-3.0
	15-22	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.8-2.0
	22-26	27-35	2.00-4.00	0.12-0.20	3.0-6.0	0.5-1.0
	26-31	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.5-1.0
	31-42	27-35	2.00-4.00	0.09-0.20	3.0-6.0	0.2-1.0
	42-52	20-35	2.00-14.00	0.09-0.20	1.0-6.0	0.2-1.0
	52	---	---	---	---	---
Dunstone gravelly loam-------	0-4	12-20	12.00-20.00	0.12-0.17	0.6-1.0	5.0-8.0
	4-6	14-22	12.00-18.00	0.11-0.17	0.7-2.0	1.0-2.0
	6-10	15-27	4.00-13.00	0.10-0.20	0.7-3.0	1.0-2.0
	10-15	18-35	2.00-14.00	0.10-0.20	0.9-6.0	0.5-1.5
	15-37	---	---	---	---	---
	37	---	---	---	---	---
674:						
Chawanakee gravelly sandy loam------------------------	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
674:						
Bonneyridge sandy loam-------	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
Rock outcrop, quartz diorite.						
675:						
Clearhayes sandy clay loam---	0-2	18-27	3.00-16.00	0.09-0.21	2.0-4.0	2.0-5.0
	2-10	17-35	1.40-14.00	0.09-0.20	2.0-6.0	1.0-3.0
	10-19	17-35	1.40-14.00	0.09-0.20	2.0-6.0	1.0-3.0
	19-28	2-30	0.14-141.00	0.01-0.14	0.0-4.0	0.0-0.5
	28-38	2-30	0.14-141.00	0.01-0.14	0.0-4.0	0.0-0.5
	38-46	2-30	0.14-141.00	0.01-0.14	0.0-4.0	0.0-0.5
	46	---	---	---	---	---
Hamslough clay---------------	0-3	40-60	0.42-1.40	0.10-0.15	9.0-13.5	2.0-5.0
	3-14	40-60	0.42-1.40	0.10-0.15	9.0-13.5	2.0-5.0
	14-19	40-60	0.42-1.40	0.05-0.14	9.0-13.5	0.5-2.0
	19-27	30-60	0.42-2.00	0.03-0.14	4.5-13.5	0.5-2.0
	27	---	0.01-0.42	---	---	---
676:						
Carhart clay-----------------	0-2	40-59	0.42-1.40	0.13-0.16	9.0-13.0	2.0-5.0
	2-12	40-59	0.42-1.40	0.13-0.16	9.0-13.0	0.5-2.0
	12-24	40-59	0.42-1.40	0.13-0.16	9.0-13.0	0.5-2.0
	24-30	40-59	0.42-1.40	0.13-0.16	9.0-13.0	0.5-2.0
	30	---	---	---	---	---
Anita taxadjunct clay--------	0-2	40-60	0.42-1.40	0.10-0.15	9.0-13.5	2.0-5.0
	2-6	40-60	0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0
	6-11	40-60	0.42-1.40	0.10-0.14	9.0-13.5	0.5-1.0
	11	---	---	---	---	---
677:						
Tuscan gravelly loam---------	0-2	20-27	1.40-8.00	0.12-0.17	2.0-3.0	1.0-4.0
	2-4	30-55	0.42-3.00	0.05-0.19	4.5-9.0	0.4-1.0
	4-7	30-55	0.42-3.00	0.05-0.19	4.5-9.0	0.4-1.0
	7-11	30-55	0.42-3.00	0.05-0.19	4.5-9.0	0.4-1.0
	11	---	0.00-0.01	---	---	---
Fallager loam----------------	0-1	20-30	2.00-8.00	0.14-0.20	2.0-4.5	3.0-8.0
	1-3	35-40	1.40-3.00	0.14-0.18	6.0-7.7	0.5-3.0
	3-7	40-60	0.42-1.40	0.09-0.14	7.5-13.0	0.5-3.0
	7	---	0.00-0.01	---	---	---
Anita, gravelly duripan------	0-3	40-60	0.42-1.40	0.10-0.15	9.0-13.5	2.0-5.0
	3-8	40-60	0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0
	8-15	40-60	0.42-1.40	0.10-0.14	9.0-13.5	0.5-2.0
	15	---	0.00-0.01	---	---	---
679:						
Lucksev loam-----------------	0-2	22-35	1.40-6.00	0.09-0.18	2.0-6.0	2.0-6.0
	2-7	30-50	0.90-3.00	0.09-0.20	5.0-10.0	0.4-4.0
	7-15	30-50	0.90-3.00	0.09-0.20	5.0-10.0	0.4-4.0
	15	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
679:						
Butteside gravelly loam------	0-2	22-38	1.40-14.00	0.11-0.20	1.0-3.0	2.0-6.0
	2-8	30-50	0.42-4.00	0.10-0.19	4.0-6.0	0.4-4.0
	8-13	30-50	0.42-4.00	0.10-0.19	6.0-8.0	0.4-4.0
	13-27	30-50	0.42-4.00	0.10-0.19	8.0-9.0	0.4-4.0
	27	---	---	---	---	---
Carhart clay-----------------	0-2	40-59	0.42-1.40	0.13-0.16	9.0-13.0	2.0-5.0
	2-12	40-59	0.42-1.40	0.13-0.16	9.0-13.0	0.5-2.0
	12-24	40-59	0.42-1.40	0.13-0.16	9.0-13.0	0.5-2.0
	24-30	40-59	0.42-1.40	0.13-0.16	9.0-13.0	0.5-2.0
	30	---	---	---	---	---
680:						
Lucksev loam-----------------	0-2	22-35	1.40-6.00	0.09-0.18	2.0-6.0	2.0-6.0
	2-7	30-50	0.90-3.00	0.09-0.20	5.0-10.0	0.4-4.0
	7-15	30-50	0.90-3.00	0.09-0.20	5.0-10.0	0.4-4.0
	15	---	---	---	---	---
Butteside gravelly loam------	0-2	22-38	1.40-14.00	0.11-0.20	1.0-3.0	2.0-6.0
	2-8	30-50	0.42-4.00	0.10-0.19	4.0-6.0	0.4-4.0
	8-13	30-50	0.42-4.00	0.10-0.19	6.0-8.0	0.4-4.0
	13-27	30-50	0.42-4.00	0.10-0.19	8.0-9.0	0.4-4.0
	27	---	---	---	---	---
683:						
Typic Haploxeralfs, magnesic, low elevation---------------	0-3	22-32	2.00-6.00	0.09-0.17	2.0-5.0	3.0-8.0
	3-10	27-65	0.40-4.00	0.03-0.17	4.0-9.0	0.1-4.0
	10-21	27-65	0.40-4.00	0.03-0.17	4.0-9.0	0.1-4.0
	21-30	27-65	0.40-4.00	0.03-0.17	4.0-9.0	0.1-4.0
	30	---	---	---	---	---
Earlal very gravelly loam----	0-3	20-27	4.00-14.00	0.08-0.13	2.0-4.0	4.0-8.0
	3-7	30-40	1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0
	7-14	30-40	1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0
	14	---	---	---	---	---
Rock outcrop, serpentinite.						
684:						
Typic Haploxeralfs, magnesic, low elevation---------------	0-3	22-32	2.00-6.00	0.09-0.17	2.0-5.0	3.0-8.0
	3-10	27-65	0.40-4.00	0.03-0.17	4.0-9.0	0.1-4.0
	10-21	27-65	0.40-4.00	0.03-0.17	4.0-9.0	0.1-4.0
	21-30	27-65	0.40-4.00	0.03-0.17	4.0-9.0	0.1-4.0
	30	---	---	---	---	---
Earlal very gravelly loam----	0-3	20-27	4.00-14.00	0.08-0.13	2.0-4.0	4.0-8.0
	3-7	30-40	1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0
	7-14	30-40	1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0
	14	---	---	---	---	---
Rock outcrop, serpentinite.						

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
685:						
Bosquejo taxadjunct, gravelly substratum	0-3	40-60	0.42-1.40	0.13-0.17	8.5-13.0	2.0-5.0
	3-8	40-60	0.42-1.40	0.13-0.17	8.5-13.0	2.0-5.0
	8-17	40-60	0.42-1.40	0.13-0.17	8.5-13.0	0.5-2.0
	17-27	40-60	0.42-1.40	0.13-0.17	8.5-13.0	0.5-2.0
	27-33	20-55	0.42-4.00	0.01-0.18	1.0-12.0	0.1-0.5
	33-41	20-55	0.42-4.00	0.01-0.18	1.0-12.0	0.1-0.5
	41-55	20-55	0.42-4.00	0.01-0.18	1.0-12.0	0.1-0.5
	55-70	15-40	0.01-0.42	---	0.0-7.5	0.1-0.5
	70-81	15-40	0.01-0.42	---	0.0-7.5	0.1-0.5
686:						
Redsluff taxadjunct clay loam	0-4	27-35	1.40-4.00	0.17-0.21	3.0-6.0	2.0-5.0
	4-10	27-45	0.42-4.00	0.11-0.21	3.0-9.0	0.5-2.0
	10-21	27-45	0.42-4.00	0.11-0.21	3.0-9.0	0.5-2.0
	21-32	27-45	0.42-4.00	0.11-0.21	3.0-9.0	0.5-2.0
	32-42	27-45	0.42-4.00	0.11-0.21	3.0-9.0	0.5-2.0
	42-53	2-36	1.40-141.00	0.01-0.20	0.0-6.0	0.1-0.5
	53-68	2-36	1.40-141.00	0.01-0.20	0.0-6.0	0.1-0.5
	68-75	2-36	1.40-141.00	0.01-0.20	0.0-6.0	0.1-0.5
	75-80	---	---	---	---	---
687:						
Xerorthents, shallow	0-2	18-35	1.40-14.00	0.08-0.21	2.0-6.0	2.0-6.0
	2-5	23-42	1.40-5.00	0.07-0.21	2.0-8.0	0.4-4.0
	5-8	23-42	1.40-5.00	0.07-0.21	2.0-8.0	0.4-4.0
	8	---	---	---	---	---
Typic Haploxeralfs gravelly loam	0-2	20-30	2.00-8.00	0.09-0.20	2.0-4.5	2.0-6.0
	2-8	27-50	0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0
	8-16	27-50	0.42-4.00	0.05-0.20	3.5-10.0	1.0-3.0
	16-27	27-50	0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0
	27-40	27-50	0.42-4.00	0.05-0.20	3.5-10.0	0.5-1.0
	40	---	---	---	---	---
700:						
Retsongulch very gravelly sandy loam	0-1	---	---	---	---	---
	1-3	10-22	4.00-28.00	0.06-0.15	0.5-2.0	2.0-7.0
	3-12	12-26	4.00-26.00	0.04-0.13	0.5-3.0	1.0-4.0
	12-21	12-26	4.00-26.00	0.04-0.13	0.5-3.0	0.2-1.0
	21-30	12-26	4.00-26.00	0.04-0.13	0.5-3.0	0.2-1.0
	30	---	---	---	---	---
Flumewall gravelly sandy loam	0-0.5	---	---	---	---	---
	0.5-2	12-20	14.00-28.00	0.08-0.14	0.0-2.0	3.0-7.0
	2-7	14-27	4.00-26.00	0.04-0.12	1.0-3.0	0.5-3.5
	7-18	14-27	4.00-26.00	0.04-0.12	1.0-3.0	0.5-3.5
	18	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
701:						
Powellton gravelly loam------	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	18-27	4.00-15.00	0.07-0.17	1.0-3.5	8.0-13
	4-9	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	9-15	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	15-24	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	24-30	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	30-41	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
	41-61	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
	61-83	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
Obstruction gravelly sandy loam------------------------	0-4	---	---	---	---	---
	4-7	10-20	7.00-28.00	0.05-0.15	0.0-2.0	4.0-8.0
	7-10	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	10-18	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	18-25	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	25-33	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	33-44	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	44-64	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	64-84	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	84	---	---	---	---	---
702:						
Cerpone gravelly loam--------	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-4	16-22	6.00-9.00	0.10-0.15	1.0-2.0	4.0-8.0
	4-9	20-27	4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0
	9-17	20-27	4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0
	17-26	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	26-41	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	41-57	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	57	---	---	---	---	---
Typic Haploxeralfs, magnesic, very gravelly loam----------	0-3	22-32	2.00-6.00	0.09-0.17	2.0-5.0	3.0-8.0
	3-7	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	7-12	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	12-18	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	18-24	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	24-32	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	32-42	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	42-54	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	54	---	---	---	---	---
Earlal very gravelly loam----	0-3	20-27	4.00-14.00	0.08-0.13	2.0-4.0	4.0-8.0
	3-7	30-40	1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0
	7-14	30-40	1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0
	14	---	---	---	---	---
703:						
Cerpone gravelly loam--------	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-4	16-22	6.00-9.00	0.10-0.15	1.0-2.0	4.0-8.0
	4-9	20-27	4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0
	9-17	20-27	4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0
	17-26	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	26-41	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	41-57	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	57	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
703:						
Typic Haploxeralfs, magnesic, very gravelly loam----------	0-3	22-32	2.00-6.00	0.09-0.17	2.0-5.0	3.0-8.0
	3-7	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	7-12	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	12-18	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	18-24	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	24-32	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	32-42	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	42-54	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	54	---	---	---	---	---
Earlal very gravelly loam----	0-3	20-27	4.00-14.00	0.08-0.13	2.0-4.0	4.0-8.0
	3-7	30-40	1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0
	7-14	30-40	1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0
	14	---	---	---	---	---
Rock outcrop, serpentinite.						
704:						
Typic Haploxeralfs, magnesic, very gravelly loam----------	0-3	22-32	2.00-6.00	0.09-0.17	2.0-5.0	3.0-8.0
	3-7	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	7-12	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	12-18	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	18-24	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	24-32	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	32-42	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	42-54	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	54	---	---	---	---	---
Earlal very gravelly loam----	0-3	20-27	4.00-14.00	0.08-0.13	2.0-4.0	4.0-8.0
	3-7	30-40	1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0
	7-14	30-40	1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0
	14	---	---	---	---	---
Cerpone gravelly loam--------	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-4	16-22	6.00-9.00	0.10-0.15	1.0-2.0	4.0-8.0
	4-9	20-27	4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0
	9-17	20-27	4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0
	17-26	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	26-41	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	41-57	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	57	---	---	---	---	---
Rock outcrop, serpentinite.						
705:						
Typic Haploxeralfs, magnesic, very gravelly loam----------	0-3	22-32	2.00-6.00	0.09-0.17	2.0-5.0	3.0-8.0
	3-7	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	7-12	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	12-18	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	18-24	27-45	1.00-4.00	0.03-0.17	3.0-9.0	0.5-4.0
	24-32	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	32-42	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	42-54	35-50	0.80-2.00	0.03-0.15	6.0-10.5	0.1-1.0
	54	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
705:						
Earlal very gravelly loam----	0-3	20-27	4.00-14.00	0.08-0.13	2.0-4.0	4.0-8.0
	3-7	30-40	1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0
	7-14	30-40	1.40-4.00	0.03-0.13	4.0-8.0	0.5-4.0
	14	---	---	---	---	---
Cerpone gravelly loam--------	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-4	16-22	6.00-9.00	0.10-0.15	1.0-2.0	4.0-8.0
	4-9	20-27	4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0
	9-17	20-27	4.00-8.00	0.10-0.16	2.0-3.0	1.0-4.0
	17-26	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	26-41	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	41-57	25-35	2.00-5.00	0.06-0.16	3.0-6.0	0.2-1.0
	57	---	---	---	---	---
Rock outcrop, serpentinite.						
711:						
Dixmine very gravelly loam---	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-6	18-27	4.00-8.00	0.08-0.15	1.0-3.0	4.0-8.0
	6-11	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	11-17	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	17-30	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	30-41	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	41-54	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	54	---	---	---	---	---
Toadtown loam----------	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-5	20-27	4.00-14.00	0.09-0.17	2.0-3.5	10-15
	5-8	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0
	8-13	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0
	13-18	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0
	18-27	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0
	27-51	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	51-65	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	65-75	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	75-79	---	---	---	---	0.1-0.3
712:						
Dixmine very gravelly loam---	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-6	18-27	4.00-8.00	0.08-0.15	1.0-3.0	4.0-8.0
	6-11	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	11-17	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	17-30	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	30-41	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	41-54	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	54	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
712:						
Toadtown loam----------	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-5	20-27	4.00-14.00	0.09-0.17	2.0-3.5	10-15
	5-8	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0
	8-13	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0
	13-18	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0
	18-27	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0
	27-51	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	51-65	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	65-75	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	75-79	---	---	---	---	0.1-0.3
713:						
Dixmine very gravelly loam---	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-6	18-27	4.00-8.00	0.08-0.15	1.0-3.0	4.0-8.0
	6-11	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	11-17	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	17-30	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	30-41	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	41-54	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	54	---	---	---	---	---
Toadtown loam----------	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-5	20-27	4.00-14.00	0.09-0.17	2.0-3.5	10-15
	5-8	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0
	8-13	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0
	13-18	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0
	18-27	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0
	27-51	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	51-65	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	65-75	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	75-79	---	---	---	---	0.1-0.3
714:						
Dixmine very gravelly loam---	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-6	18-27	4.00-8.00	0.08-0.15	1.0-3.0	4.0-8.0
	6-11	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	11-17	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	17-30	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	30-41	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	41-54	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	54	---	---	---	---	---
Toadtown loam----------	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-5	20-27	4.00-14.00	0.09-0.17	2.0-3.5	10-15
	5-8	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0
	8-13	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0
	13-18	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0
	18-27	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0
	27-51	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	51-65	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	65-75	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	75-79	---	---	---	---	0.1-0.3

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
715:						
Logtrain gravelly loam-------	0-1	---	---	---	---	---
	1-3	10-22	6.00-28.00	0.04-0.13	1.0-2.0	7.0-18
	3-9	12-27	3.00-26.00	0.02-0.13	1.0-3.0	2.0-7.0
	9-21	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	21-38	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	38-54	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	54	---	---	---	---	---
Bottlehill very gravelly loam------------------------	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	4-9	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	9-13	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	13-22	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	22-33	18-35	1.40-9.00	0.03-0.10	1.0-6.0	0.5-3.0
	33	---	---	---	---	---
Walkermine very gravelly loam------------------------	0-1	---	---	---	---	---
	1-3	12-26	4.00-25.00	0.02-0.14	1.0-3.0	10-15
	3-12	12-26	4.00-25.00	0.02-0.14	1.0-3.0	1.0-6.0
	12	---	---	---	---	---
716:						
Griffgulch very gravelly silt loam--------------------	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-7	18-27	4.00-9.00	0.08-0.17	1.0-3.0	6.0-9.0
	7-11	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	11-20	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	20-33	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	33-47	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	47-58	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	58	---	---	---	---	---
Surnuf gravelly loam---------	0-1	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
717:						
Griffgulch very gravelly silt loam--------------------	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-7	18-27	4.00-9.00	0.08-0.17	1.0-3.0	6.0-9.0
	7-11	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	11-20	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	20-33	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	33-47	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	47-58	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
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Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
717:						
Surnuf gravelly loam---------	0-1	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
718:						
Griffgulch very gravelly silt loam----------	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-7	18-27	4.00-9.00	0.08-0.17	1.0-3.0	6.0-9.0
	7-11	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	11-20	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	20-33	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	33-47	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	47-58	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	---	---	---	---	---	---
Surnuf gravelly loam---------	0-1	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
Spine taxadjunct very cobbly loam----------	0-2	18-27	4.00-9.00	0.03-0.14	2.0-4.0	4.0-9.0
	2-15	22-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-6.0
	15	---	---	---	---	---
719:						
Griffgulch very gravelly silt loam----------	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-7	18-27	4.00-9.00	0.08-0.17	1.0-3.0	6.0-9.0
	7-11	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	11-20	27-35	2.00-4.00	0.06-0.15	3.0-6.0	3.0-7.0
	20-33	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	33-47	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	47-58	35-50	0.50-2.00	0.04-0.12	6.0-9.0	0.5-2.0
	58	---	---	---	---	---
Surnuf gravelly loam---------	0-1	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
Spine taxadjunct very cobbly loam----------	0-2	18-27	4.00-9.00	0.03-0.14	2.0-4.0	4.0-9.0
	2-15	22-35	2.00-6.00	0.03-0.14	2.0-6.0	0.5-6.0
	15	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
720:						
Dystroxerepts extremely gravelly loam	0-1	---	---	---	---	---
	1-4	12-27	4.00-30.00	0.05-0.12	1.0-3.0	2.0-6.0
	4-12	10-30	2.00-30.00	0.01-0.14	1.0-4.5	0.2-2.0
	12-22	10-30	2.00-30.00	0.01-0.14	1.0-4.5	0.2-2.0
	22-28	10-30	2.00-30.00	0.01-0.14	1.0-4.5	0.2-2.0
	28-38	10-30	2.00-30.00	0.01-0.14	1.0-4.5	0.2-2.0
	38	---	---	---	---	---
Haploxeralfs very gravelly loam	0-0.5	---	---	---	---	---
	0.5-4	17-27	4.00-30.00	0.05-0.16	1.0-3.0	2.0-8.0
	4-9	20-40	1.40-7.00	0.03-0.15	2.0-7.5	0.1-3.0
	9-13	20-40	1.40-7.00	0.03-0.15	2.0-7.5	0.1-3.0
	13-22	20-40	1.40-7.00	0.03-0.15	2.0-7.5	0.1-3.0
	22-31	20-40	1.40-7.00	0.03-0.15	2.0-7.5	0.1-3.0
	31-47	20-40	1.40-7.00	0.03-0.15	2.0-7.5	0.1-3.0
	47	---	---	---	---	---
Rock outcrop, metavolcanic.						
721:						
Haploxerands, granitic till, medial sandy loam	0-2	---	---	---	---	---
	2-5	4-8	14.00-42.00	0.02-0.11	0.0-0.0	5.0-15
	5-12	4-8	14.00-42.00	0.02-0.11	0.0-0.0	5.0-15
	12-22	3-6	14.00-42.00	0.02-0.09	0.0-0.0	3.0-7.0
	22-41	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	41-55	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	55-74	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	74-87	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
722:						
Haploxerands, granitic till, medial sandy loam	0-2	---	---	---	---	---
	2-5	4-8	14.00-42.00	0.02-0.11	0.0-0.0	5.0-15
	5-12	4-8	14.00-42.00	0.02-0.11	0.0-0.0	5.0-15
	12-22	3-6	14.00-42.00	0.02-0.09	0.0-0.0	3.0-7.0
	22-41	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	41-55	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	55-74	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	74-87	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
723:						
Haploxerands, granitic till, medial sandy loam	0-2	---	---	---	---	---
	2-5	4-8	14.00-42.00	0.02-0.11	0.0-0.0	5.0-15
	5-12	4-8	14.00-42.00	0.02-0.11	0.0-0.0	5.0-15
	12-22	3-6	14.00-42.00	0.02-0.09	0.0-0.0	3.0-7.0
	22-41	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	41-55	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	55-74	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0
	74-87	1-5	30.00-141.00	0.01-0.09	0.0-0.0	0.1-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
724:						
Haploxerands, volcanic till, cobbly medial sandy loam----	0-2	---	---	---	---	---
	2-4	6-12	14.00-42.00	0.04-0.10	0.0-0.0	10-15
	4-17	8-14	14.00-42.00	0.03-0.10	0.0-0.0	5.0-10
	17-37	10-22	14.00-42.00	0.02-0.15	0.0-2.0	0.5-5.0
	37-41	10-22	14.00-42.00	0.02-0.15	0.0-2.0	0.5-5.0
	41-52	2-8	0.01-0.42	0.01-0.10	0.0-0.0	0.1-0.5
	52-80	2-8	0.01-0.42	0.01-0.10	0.0-0.0	0.1-0.5
725:						
Haploxerands, volcanic till, cobbly medial sandy loam----	0-2	---	---	---	---	---
	2-4	6-12	14.00-42.00	0.04-0.10	0.0-0.0	10-15
	4-17	8-14	14.00-42.00	0.03-0.10	0.0-0.0	5.0-10
	17-37	10-22	14.00-42.00	0.02-0.15	0.0-2.0	0.5-5.0
	37-41	10-22	14.00-42.00	0.02-0.15	0.0-2.0	0.5-5.0
	41-52	2-8	0.01-0.42	0.01-0.10	0.0-0.0	0.1-0.5
	52-80	2-8	0.01-0.42	0.01-0.10	0.0-0.0	0.1-0.5
726:						
Haploxerands, volcanic till, cobbly medial sandy loam----	0-2	---	---	---	---	---
	2-4	6-12	14.00-42.00	0.04-0.10	0.0-0.0	10-15
	4-17	8-14	14.00-42.00	0.03-0.10	0.0-0.0	5.0-10
	17-37	10-22	14.00-42.00	0.02-0.15	0.0-2.0	0.5-5.0
	37-41	10-22	14.00-42.00	0.02-0.15	0.0-2.0	0.5-5.0
	41-52	2-8	0.01-0.42	0.01-0.10	0.0-0.0	0.1-0.5
	52-80	2-8	0.01-0.42	0.01-0.10	0.0-0.0	0.1-0.5
727:						
Bonneyridge sandy loam-------	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
728:						
Bonneyridge sandy loam-------	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
729:						
Bonneyridge sandy loam-------	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
730:						
Tusccoll gravelly loam-------	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-6	17-25	4.00-16.00	0.09-0.17	2.0-3.0	6.0-10
	6-14	20-39	1.40-8.00	0.08-0.21	2.0-7.0	2.0-6.0
	14-23	20-39	1.40-8.00	0.08-0.21	2.0-7.0	2.0-6.0
	23-33	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
	33-41	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
	41-49	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
	49-70	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
Schott very gravelly loam----	0-2	---	---	---	---	---
	2-6	15-25	4.00-21.00	0.07-0.16	1.0-3.0	6.0-10
	6-13	18-35	1.40-20.00	0.03-0.14	1.0-6.0	2.0-6.0
	13-22	18-35	1.40-20.00	0.03-0.14	1.0-6.0	2.0-6.0
	22-40	18-35	1.40-20.00	0.03-0.14	1.0-6.0	0.5-2.0
	40-50	18-35	1.40-20.00	0.03-0.14	1.0-6.0	0.5-2.0
	50	---	---	---	---	---
731:						
Tusccoll gravelly loam-------	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-6	17-25	4.00-16.00	0.09-0.17	2.0-3.0	6.0-10
	6-14	20-39	1.40-8.00	0.08-0.21	2.0-7.0	2.0-6.0
	14-23	20-39	1.40-8.00	0.08-0.21	2.0-7.0	2.0-6.0
	23-33	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
	33-41	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
	41-49	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
	49-70	20-39	1.40-8.00	0.08-0.21	2.0-7.0	0.5-2.0
Schott very gravelly loam----	0-2	---	---	---	---	---
	2-6	15-25	4.00-21.00	0.07-0.16	1.0-3.0	6.0-10
	6-13	18-35	1.40-20.00	0.03-0.14	1.0-6.0	2.0-6.0
	13-22	18-35	1.40-20.00	0.03-0.14	1.0-6.0	2.0-6.0
	22-40	18-35	1.40-20.00	0.03-0.14	1.0-6.0	0.5-2.0
	40-50	18-35	1.40-20.00	0.03-0.14	1.0-6.0	0.5-2.0
	50	---	---	---	---	---
732:						
Bonepile taxadjunct, duripan substratum------------------	0-1	---	---	---	---	---
	1-4	10-20	14.00-23.00	0.02-0.12	0.0-2.0	10-15
	4-7	10-20	14.00-23.00	0.02-0.12	0.0-2.0	10-15
	7-15	10-20	7.00-23.00	0.02-0.12	0.0-2.0	5.0-10
	15-30	10-25	3.00-23.00	0.02-0.11	0.0-3.0	1.0-5.0
	30-37	10-25	3.00-23.00	0.02-0.11	0.0-3.0	1.0-5.0
	37-47	15-35	2.00-21.00	0.02-0.09	1.0-6.0	0.5-3.0
	47	---	---	---	---	---
733:						
Haploxeralfs, terrace, gravelly loam---------------	0-5	15-26	4.00-20.00	0.10-0.18	1.0-3.0	1.0-5.0
	5-11	18-35	1.40-7.00	0.02-0.20	2.0-6.0	0.2-2.0
	11-18	18-35	1.40-7.00	0.02-0.20	2.0-6.0	0.2-2.0
	18-32	18-35	1.40-7.00	0.02-0.20	2.0-6.0	0.2-2.0
	32-48	18-35	1.40-7.00	0.02-0.20	2.0-6.0	0.2-2.0
	48-63	18-35	1.40-7.00	0.02-0.20	2.0-6.0	0.2-2.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
734:						
Haploxerands medial sandy loam	0-0.5	---	---	---	---	---
	0.5-2	3-18	14.00-42.00	0.07-0.12	0.0-0.0	5.0-10
	2-5	3-18	14.00-42.00	0.07-0.12	0.0-0.0	5.0-10
	5-12	1-20	14.00-141.00	0.03-0.13	0.0-0.0	0.1-3.0
	12-23	1-20	14.00-141.00	0.03-0.13	0.0-0.0	0.1-3.0
	23-30	1-20	14.00-141.00	0.03-0.13	0.0-0.0	0.1-3.0
	30-42	1-20	14.00-141.00	0.03-0.13	0.0-0.0	0.1-3.0
	42-60	1-20	14.00-141.00	0.03-0.13	0.0-0.0	0.1-3.0
	60-80	1-20	14.00-141.00	0.03-0.13	0.0-0.0	0.1-3.0
Aquic Xerofluvents peaty very fine sandy loam	0-3	2-6	10.00-42.00	0.17-0.20	0.0-0.0	10-15
	3-7	2-6	10.00-42.00	0.17-0.20	0.0-0.0	10-15
	7-16	2-6	30.00-141.00	0.03-0.09	0.0-0.0	0.1-1.0
	16-19	2-6	10.00-42.00	0.12-0.20	0.0-0.0	6.0-15
	19-23	2-6	30.00-141.00	0.03-0.09	0.0-0.0	0.1-1.0
	23-35	2-6	10.00-42.00	0.12-0.20	0.0-0.0	6.0-15
	35-49	2-6	30.00-141.00	0.03-0.09	0.0-0.0	0.1-1.0
	49-63	2-6	10.00-42.00	0.12-0.20	0.0-0.0	6.0-15
	63-71	2-6	30.00-141.00	0.03-0.09	0.0-0.0	0.1-1.0
	71-80	2-6	10.00-42.00	0.12-0.20	0.0-0.0	6.0-15
735:						
Fluvaquents, loamy	0-0.5	---	---	---	---	---
	0.5-2	12-27	4.00-25.00	0.12-0.18	1.0-3.0	2.0-5.0
	2-9	12-27	4.00-25.00	0.12-0.18	1.0-3.0	2.0-5.0
	9-18	12-27	2.00-25.00	0.10-0.20	1.0-3.0	1.0-3.0
	18-24	12-27	2.00-25.00	0.10-0.20	1.0-3.0	1.0-3.0
	24-27	10-20	4.00-35.00	0.10-0.18	0.5-2.0	0.2-1.5
	27-37	10-20	4.00-35.00	0.10-0.18	0.5-2.0	0.2-1.5
	37-45	12-27	4.00-30.00	0.10-0.18	1.0-3.0	2.0-6.0
	45-65	12-27	4.00-30.00	0.10-0.18	1.0-3.0	2.0-6.0
	65-70	12-27	4.00-30.00	0.10-0.18	1.0-3.0	2.0-6.0
	70-85	5-30	2.00-40.00	0.07-0.18	0.2-4.0	0.2-1.5
801:						
Obstruction gravelly sandy loam	0-4	---	---	---	---	---
	4-7	10-20	7.00-28.00	0.05-0.15	0.0-2.0	4.0-8.0
	7-10	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	10-18	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	18-25	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	25-33	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	33-44	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	44-64	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	64-84	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	84	---	---	---	---	---
802:						
Obskel very gravelly sandy loam	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-4	8-16	14.00-30.00	0.05-0.11	0.0-1.0	4.0-8.0
	4-9	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	9-19	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	19-30	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	30-56	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	56	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
802:						
Obstruction gravelly sandy loam	0-4	---	---	---	---	---
	4-7	10-20	7.00-28.00	0.05-0.15	0.0-2.0	4.0-8.0
	7-10	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	10-18	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	18-25	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	25-33	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	33-44	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	44-64	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	64-84	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	84	---	---	---	---	---
803:						
Obskel very gravelly sandy loam	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-4	8-16	14.00-30.00	0.05-0.11	0.0-1.0	4.0-8.0
	4-9	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	9-19	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	19-30	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	30-56	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	56	---	---	---	---	---
Obstruction gravelly sandy loam	0-4	---	---	---	---	---
	4-7	10-20	7.00-28.00	0.05-0.15	0.0-2.0	4.0-8.0
	7-10	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	10-18	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	18-25	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	25-33	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	33-44	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	44-64	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	64-84	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	84	---	---	---	---	---
804:						
Obskel very gravelly sandy loam	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-4	8-16	14.00-30.00	0.05-0.11	0.0-1.0	4.0-8.0
	4-9	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	9-19	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	19-30	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	30-56	10-24	4.00-28.00	0.03-0.16	0.0-3.0	0.3-4.0
	56	---	---	---	---	---
Obstruction gravelly sandy loam	0-4	---	---	---	---	---
	4-7	10-20	7.00-28.00	0.05-0.15	0.0-2.0	4.0-8.0
	7-10	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	10-18	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	18-25	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	25-33	12-25	4.00-26.00	0.05-0.17	0.0-3.0	0.5-4.0
	33-44	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	44-64	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	64-84	5-20	7.00-35.00	0.07-0.17	0.0-2.0	0.1-0.5
	84	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
804:						
Retsongulch very gravelly sandy loam	0-1	---	---	---	---	---
	1-3	10-22	4.00-28.00	0.06-0.15	0.5-2.0	2.0-7.0
	3-12	12-26	4.00-26.00	0.04-0.13	0.5-3.0	1.0-4.0
	12-21	12-26	4.00-26.00	0.04-0.13	0.5-3.0	0.2-1.0
	21-30	12-26	4.00-26.00	0.04-0.13	0.5-3.0	0.2-1.0
	30	---	---	---	---	---
805:						
Bottlehill very gravelly loam	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	4-9	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	9-13	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	13-22	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	22-33	18-35	1.40-9.00	0.03-0.10	1.0-6.0	0.5-3.0
	33	---	---	---	---	---
Walkermine very gravelly loam	0-1	---	---	---	---	---
	1-3	12-26	4.00-25.00	0.02-0.14	1.0-3.0	10-15
	3-12	12-26	4.00-25.00	0.02-0.14	1.0-3.0	1.0-6.0
	12	---	---	---	---	---
Logtrain gravelly loam	0-1	---	---	---	---	---
	1-3	10-22	6.00-28.00	0.04-0.13	1.0-2.0	7.0-18
	3-9	12-27	3.00-26.00	0.02-0.13	1.0-3.0	2.0-7.0
	9-21	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	21-38	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	38-54	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	54	---	---	---	---	---
806:						
Bottlehill very gravelly loam	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	4-9	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	9-13	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	13-22	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	22-33	18-35	1.40-9.00	0.03-0.10	1.0-6.0	0.5-3.0
	33	---	---	---	---	---
Walkermine very gravelly loam	0-1	---	---	---	---	---
	1-3	12-26	4.00-25.00	0.02-0.14	1.0-3.0	10-15
	3-12	12-26	4.00-25.00	0.02-0.14	1.0-3.0	1.0-6.0
	12	---	---	---	---	---
Logtrain gravelly loam	0-1	---	---	---	---	---
	1-3	10-22	6.00-28.00	0.04-0.13	1.0-2.0	7.0-18
	3-9	12-27	3.00-26.00	0.02-0.13	1.0-3.0	2.0-7.0
	9-21	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	21-38	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	38-54	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	54	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
807:						
Bottlehill very gravelly loam	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	4-9	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	9-13	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	13-22	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	22-33	18-35	1.40-9.00	0.03-0.10	1.0-6.0	0.5-3.0
	33	---	---	---	---	---
Logtrain gravelly loam	0-1	---	---	---	---	---
	1-3	10-22	6.00-28.00	0.04-0.13	1.0-2.0	7.0-18
	3-9	12-27	3.00-26.00	0.02-0.13	1.0-3.0	2.0-7.0
	9-21	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	21-38	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	38-54	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	54	---	---	---	---	---
Walkermine very gravelly loam	0-1	---	---	---	---	---
	1-3	12-26	4.00-25.00	0.02-0.14	1.0-3.0	10-15
	3-12	12-26	4.00-25.00	0.02-0.14	1.0-3.0	1.0-6.0
	12	---	---	---	---	---
808:						
Bottlehill very gravelly loam	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	4-9	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	9-13	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	13-22	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	22-33	18-35	1.40-9.00	0.03-0.10	1.0-6.0	0.5-3.0
	33	---	---	---	---	---
Walkermine very gravelly loam	0-1	---	---	---	---	---
	1-3	12-26	4.00-25.00	0.02-0.14	1.0-3.0	10-15
	3-12	12-26	4.00-25.00	0.02-0.14	1.0-3.0	1.0-6.0
	12	---	---	---	---	---
Logtrain gravelly loam	0-1	---	---	---	---	---
	1-3	10-22	6.00-28.00	0.04-0.13	1.0-2.0	7.0-18
	3-9	12-27	3.00-26.00	0.02-0.13	1.0-3.0	2.0-7.0
	9-21	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	21-38	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	38-54	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	54	---	---	---	---	---
809:						
Walkermine very gravelly loam	0-1	---	---	---	---	---
	1-3	12-26	4.00-25.00	0.02-0.14	1.0-3.0	10-15
	3-12	12-26	4.00-25.00	0.02-0.14	1.0-3.0	1.0-6.0
	12	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
809:						
Bottlehill very gravelly loam	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	4-9	10-20	8.00-28.00	0.04-0.11	0.0-2.0	10-20
	9-13	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	13-22	15-27	4.00-21.00	0.03-0.12	1.0-3.0	1.5-10
	22-33	18-35	1.40-9.00	0.03-0.10	1.0-6.0	0.5-3.0
	33	---	---	---	---	---
Logtrain gravelly loam	0-1	---	---	---	---	---
	1-3	10-22	6.00-28.00	0.04-0.13	1.0-2.0	7.0-18
	3-9	12-27	3.00-26.00	0.02-0.13	1.0-3.0	2.0-7.0
	9-21	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	21-38	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	38-54	12-27	3.00-26.00	0.02-0.13	1.0-3.0	0.5-2.0
	54	---	---	---	---	---
Rock outcrop, metavolcanic.						
810:						
Dixmine very gravelly loam	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-6	18-27	4.00-8.00	0.08-0.15	1.0-3.0	4.0-8.0
	6-11	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	11-17	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	17-30	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	30-41	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	41-54	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	54	---	---	---	---	---
Mac gravelly loam	0-1	---	---	---	---	---
	1-4	15-25	5.00-20.00	0.07-0.15	1.0-4.0	5.0-12
	4-9	17-35	2.00-18.00	0.07-0.19	1.0-6.0	2.0-7.0
	9-15	17-35	2.00-18.00	0.07-0.19	1.0-6.0	1.0-4.0
	15-23	17-35	2.00-18.00	0.07-0.19	1.0-6.0	0.5-2.0
	23-37	16-27	2.60-9.00	0.03-0.14	1.0-4.0	0.5-2.0
	37	---	---	---	---	---
Spine very gravelly loam	0-1	---	---	---	---	---
	1-3	12-22	5.00-28.00	0.05-0.13	0.0-2.0	4.0-8.0
	3-9	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	9-16	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	16	---	---	---	---	---
811:						
Powellton gravelly loam	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	18-27	4.00-15.00	0.07-0.17	1.0-3.5	8.0-13
	4-9	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	9-15	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	15-24	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	24-30	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	30-41	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
	41-61	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
	61-83	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
811:						
Toadtown loam----------	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-5	20-27	4.00-14.00	0.09-0.17	2.0-3.5	10-15
	5-8	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0
	8-13	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0
	13-18	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0
	18-27	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0
	27-51	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	51-65	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	65-75	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	75-79	---	---	---	---	0.1-0.3
812:						
Powellton gravelly loam------	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	18-27	4.00-15.00	0.07-0.17	1.0-3.5	8.0-13
	4-9	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	9-15	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	15-24	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	24-30	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	30-41	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
	41-61	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
	61-83	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
Toadtown loam----------	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-5	20-27	4.00-14.00	0.09-0.17	2.0-3.5	10-15
	5-8	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0
	8-13	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0
	13-18	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0
	18-27	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0
	27-51	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	51-65	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	65-75	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	75-79	---	---	---	---	0.1-0.3
813:						
Powellton gravelly loam------	0-0.5	---	---	---	---	---
	0.5-2	---	---	---	---	---
	2-4	18-27	4.00-15.00	0.07-0.17	1.0-3.5	8.0-13
	4-9	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	9-15	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	15-24	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	24-30	22-35	2.00-6.00	0.12-0.21	2.0-6.0	0.5-7.0
	30-41	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
	41-61	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
	61-83	17-30	3.00-9.00	0.12-0.21	1.0-4.5	0.1-0.5
Toadtown loam----------	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-5	20-27	4.00-14.00	0.09-0.17	2.0-3.5	10-15
	5-8	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0
	8-13	25-35	3.00-14.00	0.12-0.20	3.0-6.0	3.0-8.0
	13-18	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0
	18-27	35-45	1.00-8.00	0.10-0.19	6.0-9.0	0.8-3.0
	27-51	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	51-65	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	65-75	18-35	2.00-9.00	0.14-0.21	1.0-6.0	0.1-0.3
	75-79	---	---	---	---	0.1-0.3

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
814:						
Mountyana gravelly loam------	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-4	15-25	4.00-21.00	0.09-0.18	1.0-3.0	6.0-10
	4-9	18-35	2.00-9.00	0.13-0.21	1.0-6.0	1.0-5.0
	9-13	18-35	2.00-9.00	0.13-0.21	1.0-6.0	1.0-5.0
	13-19	18-35	2.00-9.00	0.13-0.21	1.0-6.0	1.0-5.0
	19-26	18-35	2.00-16.00	0.13-0.21	1.0-6.0	0.5-1.0
	26-37	18-35	2.00-16.00	0.09-0.21	1.0-6.0	0.5-1.0
	37-52	18-30	3.00-9.00	0.02-0.13	1.0-4.5	0.1-1.0
	52-65	16-25	4.00-9.00	0.02-0.11	1.0-3.0	0.1-1.0
	65	---	---	---	---	---
815:						
Mountyana gravelly loam------	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-4	15-25	4.00-21.00	0.09-0.18	1.0-3.0	6.0-10
	4-9	18-35	2.00-9.00	0.13-0.21	1.0-6.0	1.0-5.0
	9-13	18-35	2.00-9.00	0.13-0.21	1.0-6.0	1.0-5.0
	13-19	18-35	2.00-9.00	0.13-0.21	1.0-6.0	1.0-5.0
	19-26	18-35	2.00-16.00	0.13-0.21	1.0-6.0	0.5-1.0
	26-37	18-35	2.00-16.00	0.09-0.21	1.0-6.0	0.5-1.0
	37-52	18-30	3.00-9.00	0.02-0.13	1.0-4.5	0.1-1.0
	52-65	16-25	4.00-9.00	0.02-0.11	1.0-3.0	0.1-1.0
	65	---	---	---	---	---
817:						
Lydon very gravelly medial coarse sandy loam----------	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-3	10-18	14.00-28.00	0.03-0.10	0.0-1.0	10-18
	3-6	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	6-13	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	13-21	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	21-35	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	35	---	---	---	---	---
818:						
Lydon very gravelly medial coarse sandy loam----------	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-3	10-18	14.00-28.00	0.03-0.10	0.0-1.0	10-18
	3-6	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	6-13	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	13-21	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	21-35	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	35	---	---	---	---	---
819:						
Lydon very gravelly medial coarse sandy loam----------	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-3	10-18	14.00-28.00	0.03-0.10	0.0-1.0	10-18
	3-6	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	6-13	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	13-21	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	21-35	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	35	---	---	---	---	---
Rock outcrop, mudflow breccia.						

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
820:						
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-3	10-18	14.00-28.00	0.03-0.10	0.0-1.0	10-18
	3-6	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	6-13	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	13-21	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	21-35	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	35	---	---	---	---	---
Rock outcrop, mudflow breccia.						
821:						
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-3	10-18	14.00-28.00	0.03-0.10	0.0-1.0	10-18
	3-6	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	6-13	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	13-21	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	21-35	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	35	---	---	---	---	---
Rock outcrop, mudflow breccia.						
822:						
Bonepile gravelly medial loam	0-1	---	---	---	---	---
	1-3	10-20	8.00-28.00	0.08-0.15	0.0-1.0	10-15
	3-9	10-20	8.00-28.00	0.08-0.15	0.0-1.0	10-15
	9-18	10-20	8.00-28.00	0.08-0.15	0.0-1.0	5.0-10
	18-30	12-20	7.00-28.00	0.05-0.14	0.0-1.0	3.0-5.0
	30-44	15-25	4.00-18.00	0.03-0.14	1.0-3.0	0.5-3.0
	44	---	---	---	---	---
823:						
Bonepile gravelly medial loam	0-1	---	---	---	---	---
	1-3	10-20	8.00-28.00	0.08-0.15	0.0-1.0	10-15
	3-9	10-20	8.00-28.00	0.08-0.15	0.0-1.0	10-15
	9-18	10-20	8.00-28.00	0.08-0.15	0.0-1.0	5.0-10
	18-30	12-20	7.00-28.00	0.05-0.14	0.0-1.0	3.0-5.0
	30-44	15-25	4.00-18.00	0.03-0.14	1.0-3.0	0.5-3.0
	44	---	---	---	---	---
824:						
Beecee very gravelly medial loam	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-4	8-20	8.00-28.00	0.04-0.13	0.0-1.0	10-15
	4-8	10-20	8.00-28.00	0.03-0.14	0.0-1.0	3.0-8.0
	8-15	10-20	8.00-28.00	0.03-0.14	0.0-1.0	3.0-8.0
	15-22	10-20	8.00-28.00	0.03-0.14	0.0-1.0	3.0-8.0
	22-31	12-22	7.00-26.00	0.03-0.14	0.0-2.0	1.0-3.0
	31-44	12-22	7.00-26.00	0.03-0.14	0.0-2.0	1.0-3.0
	44-59	18-27	2.70-16.00	0.03-0.14	1.0-3.0	0.2-1.0
	59-68	18-27	2.70-16.00	0.03-0.14	1.0-3.0	0.2-1.0
	68-86	18-27	2.70-16.00	0.03-0.14	1.0-3.0	0.2-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
825:						
Beecee very gravelly medial loam	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-4	8-20	8.00-28.00	0.04-0.13	0.0-1.0	10-15
	4-8	10-20	8.00-28.00	0.03-0.14	0.0-1.0	3.0-8.0
	8-15	10-20	8.00-28.00	0.03-0.14	0.0-1.0	3.0-8.0
	15-22	10-20	8.00-28.00	0.03-0.14	0.0-1.0	3.0-8.0
	22-31	12-22	7.00-26.00	0.03-0.14	0.0-2.0	1.0-3.0
	31-44	12-22	7.00-26.00	0.03-0.14	0.0-2.0	1.0-3.0
	44-59	18-27	2.70-16.00	0.03-0.14	1.0-3.0	0.2-1.0
	59-68	18-27	2.70-16.00	0.03-0.14	1.0-3.0	0.2-1.0
	68-86	18-27	2.70-16.00	0.03-0.14	1.0-3.0	0.2-1.0
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	---	---
	0.5-1	---	---	---	---	---
	1-3	10-18	14.00-28.00	0.03-0.10	0.0-1.0	10-18
	3-6	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	6-13	10-18	14.00-28.00	0.02-0.11	0.0-1.0	3.0-13
	13-21	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	21-35	12-20	14.00-26.00	0.01-0.09	0.0-1.0	1.0-5.0
	35	---	---	---	---	---
826:						
Redbone gravelly medial sandy loam	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-4	10-16	20.00-28.00	0.08-0.13	0.0-1.0	8.0-12
	4-7	12-18	9.00-26.00	0.08-0.15	0.0-1.0	2.0-6.0
	7-17	12-18	9.00-26.00	0.08-0.15	0.0-1.0	2.0-6.0
	17-28	15-22	4.00-21.00	0.06-0.12	1.0-2.0	0.5-2.0
	28-41	15-22	4.00-21.00	0.06-0.12	1.0-2.0	0.5-2.0
	41-54	15-22	4.00-21.00	0.06-0.12	1.0-2.0	0.5-2.0
	54	---	---	---	---	---
827:						
Redbone gravelly medial sandy loam	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-4	10-16	20.00-28.00	0.08-0.13	0.0-1.0	8.0-12
	4-7	12-18	9.00-26.00	0.08-0.15	0.0-1.0	2.0-6.0
	7-17	12-18	9.00-26.00	0.08-0.15	0.0-1.0	2.0-6.0
	17-28	15-22	4.00-21.00	0.06-0.12	1.0-2.0	0.5-2.0
	28-41	15-22	4.00-21.00	0.06-0.12	1.0-2.0	0.5-2.0
	41-54	15-22	4.00-21.00	0.06-0.12	1.0-2.0	0.5-2.0
	54	---	---	---	---	---
829:						
Paradiso loam	0-2	---	---	---	---	---
	2-4	17-27	4.00-9.00	0.14-0.18	1.0-3.0	5.0-15
	4-9	24-35	2.00-5.00	0.16-0.21	3.0-6.0	2.0-8.0
	9-16	25-40	1.40-5.00	0.16-0.21	3.0-7.0	1.0-5.0
	16-25	35-55	0.45-2.00	0.14-0.19	6.0-9.0	0.5-3.0
	25-45	35-55	0.45-2.00	0.14-0.19	6.0-9.0	0.5-3.0
	45-58	17-35	2.00-9.00	0.12-0.21	1.0-6.0	0.1-0.5
	58-74	17-35	2.00-9.00	0.12-0.21	1.0-6.0	0.1-0.5
	74-84	17-27	4.00-9.00	0.10-0.18	1.0-3.0	0.1-0.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
830:						
Paradiso loam----------	0-2	---	---	---	---	---
	2-4	17-27	4.00-9.00	0.14-0.18	1.0-3.0	5.0-15
	4-9	24-35	2.00-5.00	0.16-0.21	3.0-6.0	2.0-8.0
	9-16	25-40	1.40-5.00	0.16-0.21	3.0-7.0	1.0-5.0
	16-25	35-55	0.45-2.00	0.14-0.19	6.0-9.0	0.5-3.0
	25-45	35-55	0.45-2.00	0.14-0.19	6.0-9.0	0.5-3.0
	45-58	17-35	2.00-9.00	0.12-0.21	1.0-6.0	0.1-0.5
	58-74	17-35	2.00-9.00	0.12-0.21	1.0-6.0	0.1-0.5
	74-84	17-27	4.00-9.00	0.10-0.18	1.0-3.0	0.1-0.5
831:						
Surnuf gravelly loam---------	0-1	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
Bigridge loam----------	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
Spine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-22	5.00-28.00	0.05-0.13	0.0-2.0	4.0-8.0
	3-9	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	9-16	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	16	---	---	---	---	---
832:						
Surnuf gravelly loam---------	0-1	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
Bigridge loam----------	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
Spine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-22	5.00-28.00	0.05-0.13	0.0-2.0	4.0-8.0
	3-9	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	9-16	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	16	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
833:						
Surnuf gravelly loam---------	0-1	---	---	---	---	---
	1-4	22-30	3.00-7.00	0.11-0.20	2.0-4.5	6.0-9.0
	4-9	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	9-16	27-40	1.40-4.00	0.12-0.21	3.5-7.5	2.0-6.0
	16-27	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	27-29	35-55	1.40-2.00	0.08-0.19	6.0-9.0	0.5-2.0
	29-56	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
	56-72	35-55	1.40-2.00	0.05-0.17	6.0-9.0	0.2-1.0
Bigridge loam----------	0-1	---	---	---	---	---
	1-5	15-25	4.00-20.00	0.11-0.17	1.0-3.0	1.0-4.0
	5-9	19-30	3.00-14.00	0.11-0.16	1.0-4.5	1.0-4.0
	9-15	18-35	2.00-14.00	0.10-0.20	1.0-6.0	1.0-4.0
	15-20	18-35	2.00-14.00	0.10-0.20	1.0-6.0	0.5-1.0
	20-27	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.3-1.0
	27-36	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	36-51	15-35	2.00-20.00	0.01-0.11	1.0-6.0	0.1-1.0
	51-62	---	---	---	---	---
Spine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-22	5.00-28.00	0.05-0.13	0.0-2.0	4.0-8.0
	3-9	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	9-16	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	16	---	---	---	---	---
834:						
Hietanen gravelly loam-------	0-1	---	---	---	---	---
	1-3	18-27	4.00-7.00	0.10-0.19	2.0-4.0	5.0-12
	3-8	22-35	2.00-5.00	0.11-0.21	2.0-6.0	2.0-7.0
	8-19	22-35	2.00-5.00	0.11-0.21	2.0-6.0	1.0-4.0
	19-30	22-35	2.00-5.00	0.11-0.21	2.0-6.0	0.5-2.0
	30-53	22-35	2.00-5.00	0.11-0.21	2.0-6.0	0.5-2.0
	53	---	---	---	---	---
Mac gravelly loam------------	0-1	---	---	---	---	---
	1-4	15-25	5.00-20.00	0.07-0.15	1.0-4.0	5.0-12
	4-9	17-35	2.00-18.00	0.07-0.19	1.0-6.0	2.0-7.0
	9-15	17-35	2.00-18.00	0.07-0.19	1.0-6.0	1.0-4.0
	15-23	17-35	2.00-18.00	0.07-0.19	1.0-6.0	0.5-2.0
	23-37	16-27	2.60-9.00	0.03-0.14	1.0-4.0	0.5-2.0
	37	---	---	---	---	---
835:						
Hietanen gravelly loam-------	0-1	---	---	---	---	---
	1-3	18-27	4.00-7.00	0.10-0.19	2.0-4.0	5.0-12
	3-8	22-35	2.00-5.00	0.11-0.21	2.0-6.0	2.0-7.0
	8-19	22-35	2.00-5.00	0.11-0.21	2.0-6.0	1.0-4.0
	19-30	22-35	2.00-5.00	0.11-0.21	2.0-6.0	0.5-2.0
	30-53	22-35	2.00-5.00	0.11-0.21	2.0-6.0	0.5-2.0
	53	---	---	---	---	---
Mac gravelly loam------------	0-1	---	---	---	---	---
	1-4	15-25	5.00-20.00	0.07-0.15	1.0-4.0	5.0-12
	4-9	17-35	2.00-18.00	0.07-0.19	1.0-6.0	2.0-7.0
	9-15	17-35	2.00-18.00	0.07-0.19	1.0-6.0	1.0-4.0
	15-23	17-35	2.00-18.00	0.07-0.19	1.0-6.0	0.5-2.0
	23-37	16-27	2.60-9.00	0.03-0.14	1.0-4.0	0.5-2.0
	37	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
836:						
Hietanen gravelly loam-------	0-1	---	---	---	---	---
	1-3	18-27	4.00-7.00	0.10-0.19	2.0-4.0	5.0-12
	3-8	22-35	2.00-5.00	0.11-0.21	2.0-6.0	2.0-7.0
	8-19	22-35	2.00-5.00	0.11-0.21	2.0-6.0	1.0-4.0
	19-30	22-35	2.00-5.00	0.11-0.21	2.0-6.0	0.5-2.0
	30-53	22-35	2.00-5.00	0.11-0.21	2.0-6.0	0.5-2.0
	53	---	---	---	---	---
Mac gravelly loam------------	0-1	---	---	---	---	---
	1-4	15-25	5.00-20.00	0.07-0.15	1.0-4.0	5.0-12
	4-9	17-35	2.00-18.00	0.07-0.19	1.0-6.0	2.0-7.0
	9-15	17-35	2.00-18.00	0.07-0.19	1.0-6.0	1.0-4.0
	15-23	17-35	2.00-18.00	0.07-0.19	1.0-6.0	0.5-2.0
	23-37	16-27	2.60-9.00	0.03-0.14	1.0-4.0	0.5-2.0
	37	---	---	---	---	---
Spine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-22	5.00-28.00	0.05-0.13	0.0-2.0	4.0-8.0
	3-9	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	9-16	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	16	---	---	---	---	---
837:						
Hietanen gravelly loam-------	0-1	---	---	---	---	---
	1-3	18-27	4.00-7.00	0.10-0.19	2.0-4.0	5.0-12
	3-8	22-35	2.00-5.00	0.11-0.21	2.0-6.0	2.0-7.0
	8-19	22-35	2.00-5.00	0.11-0.21	2.0-6.0	1.0-4.0
	19-30	22-35	2.00-5.00	0.11-0.21	2.0-6.0	0.5-2.0
	30-53	22-35	2.00-5.00	0.11-0.21	2.0-6.0	0.5-2.0
	53	---	---	---	---	---
Spine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-22	5.00-28.00	0.05-0.13	0.0-2.0	4.0-8.0
	3-9	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	9-16	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	16	---	---	---	---	---
Mac gravelly loam------------	0-1	---	---	---	---	---
	1-4	15-25	5.00-20.00	0.07-0.15	1.0-4.0	5.0-12
	4-9	17-35	2.00-18.00	0.07-0.19	1.0-6.0	2.0-7.0
	9-15	17-35	2.00-18.00	0.07-0.19	1.0-6.0	1.0-4.0
	15-23	17-35	2.00-18.00	0.07-0.19	1.0-6.0	0.5-2.0
	23-37	16-27	2.60-9.00	0.03-0.14	1.0-4.0	0.5-2.0
	37	---	---	---	---	---
838:						
Dixmine very gravelly loam---	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-6	18-27	4.00-8.00	0.08-0.15	1.0-3.0	4.0-8.0
	6-11	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	11-17	20-30	3.00-7.00	0.07-0.18	2.0-4.5	2.0-5.0
	17-30	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	30-41	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	41-54	27-35	2.00-4.00	0.06-0.14	3.0-6.0	0.2-2.0
	54	---	---	---	---	---
Spine very gravelly loam-----	0-1	---	---	---	---	---
	1-3	12-22	5.00-28.00	0.05-0.13	0.0-2.0	4.0-8.0
	3-9	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	9-16	15-35	2.00-26.00	0.03-0.15	1.0-6.0	0.5-2.0
	16	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
838:						
Mac gravelly loam	0-1	---	---	---	---	---
	1-4	15-25	5.00-20.00	0.07-0.15	1.0-4.0	5.0-12
	4-9	17-35	2.00-18.00	0.07-0.19	1.0-6.0	2.0-7.0
	9-15	17-35	2.00-18.00	0.07-0.19	1.0-6.0	1.0-4.0
	15-23	17-35	2.00-18.00	0.07-0.19	1.0-6.0	0.5-2.0
	23-37	16-27	2.60-9.00	0.03-0.14	1.0-4.0	0.5-2.0
	37	---	---	---	---	---
839:						
Chawanakee gravelly sandy loam	0-1	---	---	---	---	---
	1-2	---	---	---	---	---
	2-5	2-6	30.00-141.00	0.04-0.10	0.0-0.0	1.0-5.0
	5-11	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	11-19	2-6	30.00-141.00	0.03-0.10	0.0-0.0	0.1-1.5
	19	---	---	---	---	---
Billscabin gravelly sandy loam	0-2	---	---	---	---	---
	2-5	5-15	14.00-42.00	0.08-0.11	0.0-1.0	2.0-4.0
	5-14	5-15	14.00-42.00	0.04-0.11	0.0-1.0	1.0-2.0
	14-27	5-15	14.00-42.00	0.02-0.08	0.0-1.0	0.3-1.0
	27-37	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
	37-57	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
	57-82	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
841:						
Billscabin gravelly sandy loam	0-2	---	---	---	---	---
	2-5	5-15	14.00-42.00	0.08-0.11	0.0-1.0	2.0-4.0
	5-14	5-15	14.00-42.00	0.04-0.11	0.0-1.0	1.0-2.0
	14-27	5-15	14.00-42.00	0.02-0.08	0.0-1.0	0.3-1.0
	27-37	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
	37-57	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
	57-82	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
Bonneyridge sandy loam	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
842:						
Billscabin gravelly sandy loam	0-2	---	---	---	---	---
	2-5	5-15	14.00-42.00	0.08-0.11	0.0-1.0	2.0-4.0
	5-14	5-15	14.00-42.00	0.04-0.11	0.0-1.0	1.0-2.0
	14-27	5-15	14.00-42.00	0.02-0.08	0.0-1.0	0.3-1.0
	27-37	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
	37-57	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0
	57-82	3-12	14.00-141.00	0.01-0.08	0.0-1.0	0.1-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
842:						
Bonneyridge sandy loam-------	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
846:						
Bonneyridge sandy loam-------	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
Lewisflat loam---------------	0-3	---	---	---	---	---
	3-5	5-18	14.00-42.00	0.13-0.15	0.0-1.0	8.0-10
	5-9	5-18	14.00-42.00	0.10-0.15	0.0-1.0	1.0-2.0
	9-18	18-27	4.00-14.00	0.13-0.18	0.9-3.0	1.0-2.0
	18-33	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6
	33-49	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6
	49-65	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6
	65-75	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6
847:						
Bonneyridge sandy loam-------	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6
Lewisflat loam---------------	0-3	---	---	---	---	---
	3-5	5-18	14.00-42.00	0.13-0.15	0.0-1.0	8.0-10
	5-9	5-18	14.00-42.00	0.10-0.15	0.0-1.0	1.0-2.0
	9-18	18-27	4.00-14.00	0.13-0.18	0.9-3.0	1.0-2.0
	18-33	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6
	33-49	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6
	49-65	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6
	65-75	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6
848:						
Bonneyridge sandy loam-------	0-1	---	---	---	---	---
	1-3	5-15	14.00-42.00	0.11-0.12	0.0-1.0	2.0-8.0
	3-6	5-15	14.00-42.00	0.10-0.11	0.0-1.0	2.0-8.0
	6-16	5-18	14.00-42.00	0.09-0.10	0.0-1.0	0.6-6.0
	16-22	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	22-31	5-18	14.00-42.00	0.09-0.10	0.0-3.0	0.6-6.0
	31-39	5-18	14.00-42.00	0.09-0.13	0.0-3.0	0.6-6.0
	39-56	5-10	42.00-141.00	0.06-0.09	0.0-3.0	0.1-0.6
	56-76	5-10	42.00-141.00	0.05-0.09	0.0-3.0	0.1-0.6

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
848:						
Lewisflat loam	0-3	---	---	---	---	---
	3-5	5-18	14.00-42.00	0.13-0.15	0.0-1.0	8.0-10
	5-9	5-18	14.00-42.00	0.10-0.15	0.0-1.0	1.0-2.0
	9-18	18-27	4.00-14.00	0.13-0.18	0.9-3.0	1.0-2.0
	18-33	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6
	33-49	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6
	49-65	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6
	65-75	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6
850:						
Lewisflat loam	0-3	---	---	---	---	---
	3-5	5-18	14.00-42.00	0.13-0.15	0.0-1.0	8.0-10
	5-9	5-18	14.00-42.00	0.10-0.15	0.0-1.0	1.0-2.0
	9-18	18-27	4.00-14.00	0.13-0.18	0.9-3.0	1.0-2.0
	18-33	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6
	33-49	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6
	49-65	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6
	65-75	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6
851:						
Lewisflat loam	0-3	---	---	---	---	---
	3-5	5-18	14.00-42.00	0.13-0.15	0.0-1.0	8.0-10
	5-9	5-18	14.00-42.00	0.10-0.15	0.0-1.0	1.0-2.0
	9-18	18-27	4.00-14.00	0.13-0.18	0.9-3.0	1.0-2.0
	18-33	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6
	33-49	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6
	49-65	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6
	65-75	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6
852:						
Lewisflat loam	0-3	---	---	---	---	---
	3-5	5-18	14.00-42.00	0.13-0.15	0.0-1.0	8.0-10
	5-9	5-18	14.00-42.00	0.10-0.15	0.0-1.0	1.0-2.0
	9-18	18-27	4.00-14.00	0.13-0.18	0.9-3.0	1.0-2.0
	18-33	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6
	33-49	18-27	4.00-14.00	0.13-0.18	0.9-3.0	0.1-0.6
	49-65	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6
	65-75	8-27	4.00-42.00	0.09-0.18	0.0-3.0	0.1-0.6
860:						
Toadtown gravelly loam	0-1	---	---	---	---	---
	1-6	15-25	4.00-25.00	0.08-0.17	1.0-3.0	10-15
	6-15	22-37	1.00-11.00	0.11-0.21	2.0-6.5	3.0-8.0
	15-32	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0
	32-43	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0
	43-55	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3
	55-80	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3
Powellton silt loam	0-1	---	---	---	---	---
	1-3	18-24	4.00-14.00	0.12-0.19	1.0-3.0	8.0-13
	3-9	18-24	4.00-14.00	0.12-0.19	1.0-3.0	4.6-13
	9-19	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	19-28	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	28-33	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	33-48	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0
	48-66	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0
	66-73	16-35	2.00-14.00	0.11-0.19	1.0-6.0	0.1-0.5
	73-83	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5
	83-109	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
861:						
Toadtown gravelly loam-------	0-1	---	---	---	---	---
	1-6	15-25	4.00-25.00	0.08-0.17	1.0-3.0	10-15
	6-15	22-37	1.00-11.00	0.11-0.21	2.0-6.5	3.0-8.0
	15-32	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0
	32-43	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0
	43-55	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3
	55-80	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3
Powellton silt loam----------	0-1	---	---	---	---	---
	1-3	18-24	4.00-14.00	0.12-0.19	1.0-3.0	8.0-13
	3-9	18-24	4.00-14.00	0.12-0.19	1.0-3.0	4.6-13
	9-19	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	19-28	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	28-33	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	33-48	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0
	48-66	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0
	66-73	16-35	2.00-14.00	0.11-0.19	1.0-6.0	0.1-0.5
	73-83	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5
	83-109	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5
862:						
Toadtown gravelly loam-------	0-1	---	---	---	---	---
	1-6	15-25	4.00-25.00	0.08-0.17	1.0-3.0	10-15
	6-15	22-37	1.00-11.00	0.11-0.21	2.0-6.5	3.0-8.0
	15-32	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0
	32-43	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0
	43-55	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3
	55-80	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3
Powellton silt loam----------	0-1	---	---	---	---	---
	1-3	18-24	4.00-14.00	0.12-0.19	1.0-3.0	8.0-13
	3-9	18-24	4.00-14.00	0.12-0.19	1.0-3.0	4.6-13
	9-19	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	19-28	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	28-33	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	33-48	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0
	48-66	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0
	66-73	16-35	2.00-14.00	0.11-0.19	1.0-6.0	0.1-0.5
	73-83	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5
	83-109	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5
863:						
Toadtown gravelly loam-------	0-1	---	---	---	---	---
	1-6	15-25	4.00-25.00	0.08-0.17	1.0-3.0	10-15
	6-15	22-37	1.00-11.00	0.11-0.21	2.0-6.5	3.0-8.0
	15-32	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0
	32-43	40-60	1.00-4.00	0.11-0.17	7.5-9.0	0.8-3.0
	43-55	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3
	55-80	18-37	1.00-1.40	0.10-0.20	1.0-6.5	0.1-0.3
Powellton silt loam----------	0-1	---	---	---	---	---
	1-3	18-24	4.00-14.00	0.12-0.19	1.0-3.0	8.0-13
	3-9	18-24	4.00-14.00	0.12-0.19	1.0-3.0	4.6-13
	9-19	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	19-28	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	28-33	22-35	2.00-11.00	0.11-0.20	2.0-6.0	0.5-7.0
	33-48	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0
	48-66	18-35	2.00-14.00	0.13-0.19	1.0-6.0	0.1-1.0
	66-73	16-35	2.00-14.00	0.11-0.19	1.0-6.0	0.1-0.5
	73-83	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5
	83-109	11-27	4.00-20.00	0.14-0.14	0.0-3.5	0.1-0.5

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
880:						
Sites taxadjunct gravelly loam	0-1	---	---	---	---	---
	1-3	16-25	4.00-42.00	0.10-0.17	0.8-3.0	10-14
	3-10	19-30	1.40-14.00	0.09-0.21	1.0-4.5	4.0-8.0
	10-21	38-50	1.40-4.00	0.11-0.18	6.0-9.0	0.3-3.0
	21-34	38-50	1.40-4.00	0.11-0.18	6.0-9.0	0.3-3.0
	34-59	45-55	1.40-4.00	0.11-0.18	7.0-9.0	0.3-1.0
	59-72	45-55	1.40-4.00	0.11-0.18	7.0-9.0	0.3-1.0
Jocal taxadjunct gravelly loam	0-3	---	---	---	---	---
	3-4	9-17	14.00-20.00	0.09-0.15	0.0-0.8	10-14
	4-9	10-22	11.00-20.00	0.08-0.17	0.5-2.0	4.0-8.0
	9-19	15-30	4.00-14.00	0.08-0.20	0.7-4.5	1.0-3.0
	19-33	15-30	4.00-14.00	0.08-0.20	0.7-4.5	1.0-3.0
	33-46	15-30	4.00-14.00	0.08-0.13	0.7-4.5	0.3-3.0
	46-52	15-30	4.00-14.00	0.03-0.20	0.7-4.5	0.1-0.3
	52-68	---	---	---	---	---
881:						
Sites taxadjunct gravelly loam	0-1	---	---	---	---	---
	1-3	16-25	4.00-42.00	0.10-0.17	0.8-3.0	10-14
	3-10	19-30	1.40-14.00	0.09-0.21	1.0-4.5	4.0-8.0
	10-21	38-50	1.40-4.00	0.11-0.18	6.0-9.0	0.3-3.0
	21-34	38-50	1.40-4.00	0.11-0.18	6.0-9.0	0.3-3.0
	34-59	45-55	1.40-4.00	0.11-0.18	7.0-9.0	0.3-1.0
	59-72	45-55	1.40-4.00	0.11-0.18	7.0-9.0	0.3-1.0
Jocal taxadjunct gravelly loam	0-3	---	---	---	---	---
	3-4	9-17	14.00-20.00	0.09-0.15	0.0-0.8	10-14
	4-9	10-22	11.00-20.00	0.08-0.17	0.5-2.0	4.0-8.0
	9-19	15-30	4.00-14.00	0.08-0.20	0.7-4.5	1.0-3.0
	19-33	15-30	4.00-14.00	0.08-0.20	0.7-4.5	1.0-3.0
	33-46	15-30	4.00-14.00	0.08-0.13	0.7-4.5	0.3-3.0
	46-52	15-30	4.00-14.00	0.03-0.20	0.7-4.5	0.1-0.3
	52-68	---	---	---	---	---
882:						
Sites taxadjunct gravelly loam	0-1	---	---	---	---	---
	1-3	16-25	4.00-42.00	0.10-0.17	0.8-3.0	10-14
	3-10	19-30	1.40-14.00	0.09-0.21	1.0-4.5	4.0-8.0
	10-21	38-50	1.40-4.00	0.11-0.18	6.0-9.0	0.3-3.0
	21-34	38-50	1.40-4.00	0.11-0.18	6.0-9.0	0.3-3.0
	34-59	45-55	1.40-4.00	0.11-0.18	7.0-9.0	0.3-1.0
	59-72	45-55	1.40-4.00	0.11-0.18	7.0-9.0	0.3-1.0
Jocal taxadjunct gravelly loam	0-3	---	---	---	---	---
	3-4	9-17	14.00-20.00	0.09-0.15	0.0-0.8	10-14
	4-9	10-22	11.00-20.00	0.08-0.17	0.5-2.0	4.0-8.0
	9-19	15-30	4.00-14.00	0.08-0.20	0.7-4.5	1.0-3.0
	19-33	15-30	4.00-14.00	0.08-0.20	0.7-4.5	1.0-3.0
	33-46	15-30	4.00-14.00	0.08-0.13	0.7-4.5	0.3-3.0
	46-52	15-30	4.00-14.00	0.03-0.20	0.7-4.5	0.1-0.3
	52-68	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
883:						
Sites taxadjunct gravelly loam	0-1	---	---	---	---	---
	1-3	16-25	4.00-42.00	0.10-0.17	0.8-3.0	10-14
	3-10	19-30	1.40-14.00	0.09-0.21	1.0-4.5	4.0-8.0
	10-21	38-50	1.40-4.00	0.11-0.18	6.0-9.0	0.3-3.0
	21-34	38-50	1.40-4.00	0.11-0.18	6.0-9.0	0.3-3.0
	34-59	45-55	1.40-4.00	0.11-0.18	7.0-9.0	0.3-1.0
	59-72	45-55	1.40-4.00	0.11-0.18	7.0-9.0	0.3-1.0
Jocal taxadjunct gravelly loam	0-3	---	---	---	---	---
	3-4	9-17	14.00-20.00	0.09-0.15	0.0-0.8	10-14
	4-9	10-22	11.00-20.00	0.08-0.17	0.5-2.0	4.0-8.0
	9-19	15-30	4.00-14.00	0.08-0.20	0.7-4.5	1.0-3.0
	19-33	15-30	4.00-14.00	0.08-0.20	0.7-4.5	1.0-3.0
	33-46	15-30	4.00-14.00	0.08-0.13	0.7-4.5	0.3-3.0
	46-52	15-30	4.00-14.00	0.03-0.20	0.7-4.5	0.1-0.3
	52-68	---	---	---	---	---
885:						
Rogerville silt loam	0-2	---	---	---	---	---
	2-7	11-27	4.00-14.00	0.10-0.19	0.0-3.0	3.0-10
	7-13	30-38	1.60-3.00	0.09-0.18	4.5-7.0	3.0-10
	13-24	35-65	1.40-2.00	0.09-0.19	6.0-9.0	0.4-1.0
	24-34	35-65	1.40-2.00	0.09-0.19	6.0-9.0	0.4-1.0
	34-42	35-65	1.40-4.00	0.09-0.19	5.8-9.0	0.2-1.0
	42-51	28-55	1.40-4.00	0.03-0.20	3.0-8.0	0.2-0.5
	51-55	---	---	---	---	---
886:						
Rogerville silt loam	0-2	---	---	---	---	---
	2-7	11-27	4.00-14.00	0.10-0.19	0.0-3.0	3.0-10
	7-13	30-38	1.60-3.00	0.09-0.18	4.5-7.0	3.0-10
	13-24	35-65	1.40-2.00	0.09-0.19	6.0-9.0	0.4-1.0
	24-34	35-65	1.40-2.00	0.09-0.19	6.0-9.0	0.4-1.0
	34-42	35-65	1.40-4.00	0.09-0.19	5.8-9.0	0.2-1.0
	42-51	28-55	1.40-4.00	0.03-0.20	3.0-8.0	0.2-0.5
	51-55	---	---	---	---	---
892:						
Rogerville silt loam	0-2	---	---	---	---	---
	2-7	11-27	4.00-14.00	0.10-0.19	0.0-3.0	3.0-10
	7-13	30-38	1.60-3.00	0.09-0.18	4.5-7.0	3.0-10
	13-24	35-65	1.40-2.00	0.09-0.19	6.0-9.0	0.4-1.0
	24-34	35-65	1.40-2.00	0.09-0.19	6.0-9.0	0.4-1.0
	34-42	35-65	1.40-4.00	0.09-0.19	5.8-9.0	0.2-1.0
	42-51	28-55	1.40-4.00	0.03-0.20	3.0-8.0	0.2-0.5
	51-55	---	---	---	---	---
893:						
Rogerville silt loam	0-2	---	---	---	---	---
	2-7	11-27	4.00-14.00	0.10-0.19	0.0-3.0	3.0-10
	7-13	30-38	1.60-3.00	0.09-0.18	4.5-7.0	3.0-10
	13-24	35-65	1.40-2.00	0.09-0.19	6.0-9.0	0.4-1.0
	24-34	35-65	1.40-2.00	0.09-0.19	6.0-9.0	0.4-1.0
	34-42	35-65	1.40-4.00	0.09-0.19	5.8-9.0	0.2-1.0
	42-51	28-55	1.40-4.00	0.03-0.20	3.0-8.0	0.2-0.5
	51-55	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
902:						
Lava flows, Lovejoy basalt.						
Lumpkin gravelly medial sandy loam	0-3	8-12	14.00-42.00	0.04-0.10	0.0-0.6	5.0-15
	3-8	9-18	14.00-42.00	0.02-0.14	0.0-1.0	5.0-15
	8-14	9-18	14.00-42.00	0.02-0.14	0.0-1.0	5.0-15
	14	---	---	---	---	---
903:						
Mudwash gravelly medial sandy loam	0-1	---	---	---	---	---
	1-4	---	---	---	---	---
	4-8	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	8-13	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	13-26	12-22	14.00-42.00	0.08-0.16	0.0-2.0	3.0-9.0
	26-35	18-38	4.00-14.00	0.12-0.18	1.0-6.0	0.8-5.0
	35-52	18-38	4.00-14.00	0.09-0.18	1.0-6.0	0.8-5.0
	52-72	15-28	4.00-14.00	0.02-0.21	1.0-4.0	0.8-1.0
	72-89	---	---	---	---	---
Timberisland very gravelly medial sandy loam	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-6	5-18	14.00-42.00	0.04-0.12	0.0-1.0	15-52
	6-14	5-18	14.00-42.00	0.04-0.12	0.0-1.0	10-20
	14-25	8-18	14.00-42.00	0.02-0.11	0.0-1.0	10-18
	25-35	10-22	14.00-42.00	0.02-0.10	0.0-1.6	2.0-10
	35-48	10-22	14.00-42.00	0.01-0.10	0.0-1.6	2.0-10
	48	---	---	---	---	---
Lavatop gravelly medial fine sandy loam	0-0.5	---	---	---	---	---
	0.5-4	18-20	14.00-42.00	0.05-0.15	0.9-1.0	10-15
	4-15	18-20	14.00-42.00	0.02-0.08	0.9-1.0	8.0-12
	15-26	18-20	14.00-42.00	0.02-0.08	0.9-1.0	5.0-10
	26	---	---	---	---	---
904:						
Lava flows, Lovejoy basalt.						
Lavatop gravelly medial fine sandy loam	0-0.5	---	---	---	---	---
	0.5-4	18-20	14.00-42.00	0.05-0.15	0.9-1.0	10-15
	4-15	18-20	14.00-42.00	0.02-0.08	0.9-1.0	8.0-12
	15-26	18-20	14.00-42.00	0.02-0.08	0.9-1.0	5.0-10
	26	---	---	---	---	---
905:						
Lava flows, Lovejoy basalt.						
Lumpkin gravelly medial sandy loam	0-3	8-12	14.00-42.00	0.04-0.10	0.0-0.6	5.0-15
	3-8	9-18	14.00-42.00	0.02-0.14	0.0-1.0	5.0-15
	8-14	9-18	14.00-42.00	0.02-0.14	0.0-1.0	5.0-15
	14	---	---	---	---	---
906:						
Lava flows, Lovejoy basalt.						

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
906:						
Lumpkin gravelly medial sandy loam	0-3	8-12	14.00-42.00	0.04-0.10	0.0-0.6	5.0-15
	3-8	9-18	14.00-42.00	0.02-0.14	0.0-1.0	5.0-15
	8-14	9-18	14.00-42.00	0.02-0.14	0.0-1.0	5.0-15
	14	---	---	---	---	---
911:						
Endoaquolls loam	0-3	16-30	2.00-18.00	0.14-0.21	0.5-4.5	3.0-8.0
	3-8	16-30	2.00-18.00	0.14-0.21	0.5-4.5	3.0-8.0
	8-17	16-30	2.00-18.00	0.14-0.21	0.5-4.5	3.0-8.0
	17-28	35-50	0.50-2.00	0.14-0.19	6.0-10.0	2.0-6.0
	28-43	35-50	0.50-2.00	0.14-0.19	6.0-10.0	3.0-8.0
	43-58	20-50	0.50-8.00	0.13-0.21	2.0-10.0	0.5-1.5
	58-73	20-50	0.50-8.00	0.13-0.21	2.0-10.0	0.5-1.5
923:						
Powderhouse medial sandy loam	0-2	---	---	---	---	---
	2-4	8-12	14.00-42.00	0.09-0.11	0.0-0.6	12-45
	4-11	8-12	14.00-42.00	0.04-0.11	0.0-0.6	12-16
	11-27	10-18	14.00-42.00	0.02-0.09	0.0-1.0	9.0-12
	27-36	10-12	14.00-42.00	0.02-0.08	0.0-0.6	4.0-9.0
	36-82	---	---	---	---	---
McNair medial coarse sandy loam	0-3	---	---	---	---	---
	3-6	5-12	14.00-42.00	0.09-0.12	0.0-0.6	9.0-45
	6-16	5-12	14.00-42.00	0.04-0.10	0.0-0.6	9.0-45
	16-25	10-18	14.00-42.00	0.04-0.09	0.0-1.0	6.0-16
	25-33	10-25	4.00-42.00	0.04-0.11	0.0-3.0	6.0-16
	33-48	10-25	4.00-42.00	0.04-0.11	0.0-3.0	6.0-9.0
	48-57	8-25	4.00-42.00	0.02-0.11	0.0-3.0	4.0-6.0
	57-88	---	---	---	---	---
Greenwell medial sandy loam	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-5	8-11	30.00-42.00	0.11-0.12	0.0-0.5	12-45
	5-10	8-11	30.00-42.00	0.11-0.12	0.0-0.5	12-45
	10-18	10-15	20.00-42.00	0.10-0.12	0.0-0.7	9.0-16
	18-23	12-18	14.00-42.00	0.11-0.12	0.0-1.0	4.0-9.0
	23-32	12-18	14.00-42.00	0.07-0.13	0.0-1.0	4.0-9.0
	---	---	---	---	---	---
924:						
Powderhouse medial sandy loam	0-2	---	---	---	---	---
	2-4	8-12	14.00-42.00	0.09-0.11	0.0-0.6	12-45
	4-11	8-12	14.00-42.00	0.04-0.11	0.0-0.6	12-16
	11-27	10-18	14.00-42.00	0.02-0.09	0.0-1.0	9.0-12
	27-36	10-12	14.00-42.00	0.02-0.08	0.0-0.6	4.0-9.0
	36-82	---	---	---	---	---
McNair medial coarse sandy loam	0-3	---	---	---	---	---
	3-6	5-12	14.00-42.00	0.09-0.12	0.0-0.6	9.0-45
	6-16	5-12	14.00-42.00	0.04-0.10	0.0-0.6	9.0-45
	16-25	10-18	14.00-42.00	0.04-0.09	0.0-1.0	6.0-16
	25-33	10-25	4.00-42.00	0.04-0.11	0.0-3.0	6.0-16
	33-48	10-25	4.00-42.00	0.04-0.11	0.0-3.0	6.0-9.0
	48-57	8-25	4.00-42.00	0.02-0.11	0.0-3.0	4.0-6.0
	57-88	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
924:						
Greenwell medial sandy loam--	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-5	8-11	30.00-42.00	0.11-0.12	0.0-0.5	12-45
	5-10	8-11	30.00-42.00	0.11-0.12	0.0-0.5	12-45
	10-18	10-15	20.00-42.00	0.10-0.12	0.0-0.7	9.0-16
	18-23	12-18	14.00-42.00	0.11-0.12	0.0-1.0	4.0-9.0
	23-32	12-18	14.00-42.00	0.07-0.13	0.0-1.0	4.0-9.0
	32	---	---	---	---	---
925:						
Powderhouse medial sandy loam	0-2	---	---	---	---	---
	2-4	8-12	14.00-42.00	0.09-0.11	0.0-0.6	12-45
	4-11	8-12	14.00-42.00	0.04-0.11	0.0-0.6	12-16
	11-27	10-18	14.00-42.00	0.02-0.09	0.0-1.0	9.0-12
	27-36	10-12	14.00-42.00	0.02-0.08	0.0-0.6	4.0-9.0
	36-82	---	---	---	---	---
McNair medial coarse sandy loam----------	0-3	---	---	---	---	---
	3-6	5-12	14.00-42.00	0.09-0.12	0.0-0.6	9.0-45
	6-16	5-12	14.00-42.00	0.04-0.10	0.0-0.6	9.0-45
	16-25	10-18	14.00-42.00	0.04-0.09	0.0-1.0	6.0-16
	25-33	10-25	4.00-42.00	0.04-0.11	0.0-3.0	6.0-16
	33-48	10-25	4.00-42.00	0.04-0.11	0.0-3.0	6.0-9.0
	48-57	8-25	4.00-42.00	0.02-0.11	0.0-3.0	4.0-6.0
	57-88	---	---	---	---	---
Greenwell medial sandy loam--	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-5	8-11	30.00-42.00	0.11-0.12	0.0-0.5	12-45
	5-10	8-11	30.00-42.00	0.11-0.12	0.0-0.5	12-45
	10-18	10-15	20.00-42.00	0.10-0.12	0.0-0.7	9.0-16
	18-23	12-18	14.00-42.00	0.11-0.12	0.0-1.0	4.0-9.0
	23-32	12-18	14.00-42.00	0.07-0.13	0.0-1.0	4.0-9.0
	32	---	---	---	---	---
930:						
Shakeridge gravelly medial coarse sandy loam----------	0-2	---	---	---	---	---
	2-4	5-12	14.00-42.00	0.04-0.10	0.0-0.6	5.0-12
	4-7	5-12	14.00-42.00	0.03-0.10	0.0-0.6	5.0-12
	7-19	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	19-25	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	25-36	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	36-55	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	55-71	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	71-87	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
Timberisland very gravelly medial sandy loam----------	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-6	5-18	14.00-42.00	0.04-0.12	0.0-1.0	15-52
	6-14	5-18	14.00-42.00	0.04-0.12	0.0-1.0	10-20
	14-25	8-18	14.00-42.00	0.02-0.11	0.0-1.0	10-18
	25-35	10-22	14.00-42.00	0.02-0.10	0.0-1.6	2.0-10
	35-48	10-22	14.00-42.00	0.01-0.10	0.0-1.6	2.0-10
	48	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
931:						
Shakeridge gravelly medial coarse sandy loam----------	0-2	---	---	---	---	---
	2-4	5-12	14.00-42.00	0.04-0.10	0.0-0.6	5.0-12
	4-7	5-12	14.00-42.00	0.03-0.10	0.0-0.6	5.0-12
	7-19	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	19-25	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	25-36	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	36-55	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	55-71	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	71-87	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
Mudwash gravelly medial sandy loam------------------	0-1	---	---	---	---	---
	1-4	---	---	---	---	---
	4-8	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	8-13	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	13-26	12-22	14.00-42.00	0.08-0.16	0.0-2.0	3.0-9.0
	26-35	18-38	4.00-14.00	0.12-0.18	1.0-6.0	0.8-5.0
	35-52	18-38	4.00-14.00	0.09-0.18	1.0-6.0	0.8-5.0
	52-72	15-28	4.00-14.00	0.02-0.21	1.0-4.0	0.8-1.0
	72-89	---	---	---	---	---
Timberisland very gravelly medial sandy loam----------	0-2	---	---	---	---	---
	2-3	---	---	---	---	---
	3-6	5-18	14.00-42.00	0.04-0.12	0.0-1.0	15-52
	6-14	5-18	14.00-42.00	0.04-0.12	0.0-1.0	10-20
	14-25	8-18	14.00-42.00	0.02-0.11	0.0-1.0	10-18
	25-35	10-22	14.00-42.00	0.02-0.10	0.0-1.6	2.0-10
	35-48	10-22	14.00-42.00	0.01-0.10	0.0-1.6	2.0-10
	48	---	---	---	---	---
932:						
Shakeridge gravelly medial coarse sandy loam----------	0-2	---	---	---	---	---
	2-4	5-12	14.00-42.00	0.04-0.10	0.0-0.6	5.0-12
	4-7	5-12	14.00-42.00	0.03-0.10	0.0-0.6	5.0-12
	7-19	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	19-25	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	25-36	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	36-55	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	55-71	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	71-87	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
Mudwash gravelly medial sandy loam------------------	0-1	---	---	---	---	---
	1-4	---	---	---	---	---
	4-8	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	8-13	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	13-26	12-22	14.00-42.00	0.08-0.16	0.0-2.0	3.0-9.0
	26-35	18-38	4.00-14.00	0.12-0.18	1.0-6.0	0.8-5.0
	35-52	18-38	4.00-14.00	0.09-0.18	1.0-6.0	0.8-5.0
	52-72	15-28	4.00-14.00	0.02-0.21	1.0-4.0	0.8-1.0
	72-89	---	---	---	---	---

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
933:						
Shakeridge gravelly medial coarse sandy loam	0-2	---	---	---	---	---
	2-4	5-12	14.00-42.00	0.04-0.10	0.0-0.6	5.0-12
	4-7	5-12	14.00-42.00	0.03-0.10	0.0-0.6	5.0-12
	7-19	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	19-25	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	25-36	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	36-55	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	55-71	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
	71-87	5-18	14.00-42.00	0.02-0.09	0.0-1.0	1.0-3.0
934:						
Mudwash gravelly medial sandy loam	0-1	---	---	---	---	---
	1-4	---	---	---	---	---
	4-8	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	8-13	8-18	14.00-42.00	0.08-0.15	0.0-1.0	5.0-10
	13-26	12-22	14.00-42.00	0.08-0.16	0.0-2.0	3.0-9.0
	26-35	18-38	4.00-14.00	0.12-0.18	1.0-6.0	0.8-5.0
	35-52	18-38	4.00-14.00	0.09-0.18	1.0-6.0	0.8-5.0
	52-72	15-28	4.00-14.00	0.02-0.21	1.0-4.0	0.8-1.0
	72-89	---	---	---	---	---
939:						
Fluvaquentic Humaquepts very fine sandy loam	0-7	12-15	20.00-30.00	0.14-0.17	0.0-1.0	5.0-10
	7-15	12-15	20.00-30.00	0.14-0.17	0.0-1.0	5.0-10
	15-22	20-25	4.00-14.00	0.16-0.18	1.0-3.0	1.0-5.0
	22-29	20-25	4.00-14.00	0.16-0.18	1.0-3.0	1.0-2.0
	29-36	20-25	4.00-14.00	0.16-0.18	1.0-3.0	0.5-1.0
	36-45	27-30	3.00-14.00	0.14-0.17	3.0-4.5	0.5-1.0
	45-60	20-27	4.00-14.00	0.09-0.13	1.0-3.0	0.4-0.6
940:						
Dejonah gravelly loam	0-1	---	---	---	---	---
	1-4	10-18	4.00-42.00	0.07-0.16	0.0-1.0	5.0-17
	4-10	18-25	4.00-42.00	0.09-0.16	0.7-3.0	2.0-10
	10-16	15-27	4.00-14.00	0.09-0.18	0.7-3.0	2.0-5.0
	16-28	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	28-37	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	37-53	8-20	4.00-42.00	0.02-0.17	0.0-1.0	1.0-2.0
	53-60	8-20	4.00-42.00	0.02-0.17	0.0-1.0	0.5-1.0
Stagpoint loam	0-0.5	---	---	---	---	---
	0.5-4	8-18	14.00-42.00	0.06-0.15	0.0-1.0	8.0-17
	4-10	10-25	4.00-42.00	0.06-0.15	0.0-3.0	8.0-17
	10-17	10-25	4.00-42.00	0.03-0.12	0.0-5.0	2.0-5.0
	17-23	15-32	4.00-42.00	0.03-0.12	1.0-5.0	2.0-5.0
	23-34	15-32	4.00-14.00	0.03-0.12	0.9-5.0	1.0-2.0
	34-49	12-18	4.00-14.00	0.03-0.12	0.0-1.0	1.0-2.0
	49-64	12-18	4.00-42.00	0.02-0.10	0.0-1.0	1.0-2.0
	64-86	9-15	14.00-42.00	0.02-0.10	0.0-1.0	0.5-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
941:						
Dejonah gravelly loam--------	0-1	---	---	---	---	---
	1-4	10-18	4.00-42.00	0.07-0.16	0.0-1.0	5.0-17
	4-10	18-25	4.00-42.00	0.09-0.16	0.7-3.0	2.0-10
	10-16	15-27	4.00-14.00	0.09-0.18	0.7-3.0	2.0-5.0
	16-28	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	28-37	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	37-53	8-20	4.00-42.00	0.02-0.17	0.0-1.0	1.0-2.0
	53-60	8-20	4.00-42.00	0.02-0.17	0.0-1.0	0.5-1.0
Stagpoint loam----------	0-0.5	---	---	---	---	---
	0.5-4	8-18	14.00-42.00	0.06-0.15	0.0-1.0	8.0-17
	4-10	10-25	4.00-42.00	0.06-0.15	0.0-3.0	8.0-17
	10-17	10-25	4.00-42.00	0.03-0.12	0.0-5.0	2.0-5.0
	17-23	15-32	4.00-42.00	0.03-0.12	1.0-5.0	2.0-5.0
	23-34	15-32	4.00-14.00	0.03-0.12	0.9-5.0	1.0-2.0
	34-49	12-18	4.00-14.00	0.03-0.12	0.0-1.0	1.0-2.0
	49-64	12-18	4.00-42.00	0.02-0.10	0.0-1.0	1.0-2.0
	64-86	9-15	14.00-42.00	0.02-0.10	0.0-1.0	0.5-1.0
942:						
Stagpoint loam----------	0-0.5	---	---	---	---	---
	0.5-4	8-18	14.00-42.00	0.06-0.15	0.0-1.0	8.0-17
	4-10	10-25	4.00-42.00	0.06-0.15	0.0-3.0	8.0-17
	10-17	10-25	4.00-42.00	0.03-0.12	0.0-5.0	2.0-5.0
	17-23	15-32	4.00-42.00	0.03-0.12	1.0-5.0	2.0-5.0
	23-34	15-32	4.00-14.00	0.03-0.12	0.9-5.0	1.0-2.0
	34-49	12-18	4.00-14.00	0.03-0.12	0.0-1.0	1.0-2.0
	49-64	12-18	4.00-42.00	0.02-0.10	0.0-1.0	1.0-2.0
	64-86	9-15	14.00-42.00	0.02-0.10	0.0-1.0	0.5-1.0
Dejonah gravelly loam--------	0-1	---	---	---	---	---
	1-4	10-18	4.00-42.00	0.07-0.16	0.0-1.0	5.0-17
	4-10	18-25	4.00-42.00	0.09-0.16	0.7-3.0	2.0-10
	10-16	15-27	4.00-14.00	0.09-0.18	0.7-3.0	2.0-5.0
	16-28	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	28-37	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	37-53	8-20	4.00-42.00	0.02-0.17	0.0-1.0	1.0-2.0
	53-60	8-20	4.00-42.00	0.02-0.17	0.0-1.0	0.5-1.0
948:						
Stagpoint loam----------	0-0.5	---	---	---	---	---
	0.5-4	8-18	14.00-42.00	0.06-0.15	0.0-1.0	8.0-17
	4-10	10-25	4.00-42.00	0.06-0.15	0.0-3.0	8.0-17
	10-17	10-25	4.00-42.00	0.03-0.12	0.0-5.0	2.0-5.0
	17-23	15-32	4.00-42.00	0.03-0.12	1.0-5.0	2.0-5.0
	23-34	15-32	4.00-14.00	0.03-0.12	0.9-5.0	1.0-2.0
	34-49	12-18	4.00-14.00	0.03-0.12	0.0-1.0	1.0-2.0
	49-64	12-18	4.00-42.00	0.02-0.10	0.0-1.0	1.0-2.0
	64-86	9-15	14.00-42.00	0.02-0.10	0.0-1.0	0.5-1.0
Dejonah gravelly loam--------	0-1	---	---	---	---	---
	1-4	10-18	4.00-42.00	0.07-0.16	0.0-1.0	5.0-17
	4-10	18-25	4.00-42.00	0.09-0.16	0.7-3.0	2.0-10
	10-16	15-27	4.00-14.00	0.09-0.18	0.7-3.0	2.0-5.0
	16-28	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	28-37	15-27	4.00-14.00	0.09-0.18	0.7-3.0	1.0-2.0
	37-53	8-20	4.00-42.00	0.02-0.17	0.0-1.0	1.0-2.0
	53-60	8-20	4.00-42.00	0.02-0.17	0.0-1.0	0.5-1.0

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
949:						
Rogerville taxadjunct fine sandy loam	0-2	---	---	---	---	---
	2-4	8-12	20.00-42.00	0.09-0.14	0.0-0.0	5.0-10
	4-7	15-22	12.00-15.00	0.08-0.10	0.0-2.0	5.0-10
	7-21	15-22	12.00-15.00	0.05-0.09	0.0-2.0	3.0-10
	21-26	15-22	12.00-15.00	0.06-0.12	0.0-2.0	3.0-10
	26-33	24-28	4.00-10.00	0.13-0.18	2.0-3.5	1.0-5.0
	33-44	24-28	4.00-10.00	0.13-0.18	2.0-3.5	1.0-5.0
	44-57	24-28	4.00-10.00	0.13-0.19	2.0-3.5	1.0-5.0
	57	---	---	---	---	---
950:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam	0-4	10-15	14.00-42.00	0.06-0.11	0.0-1.0	5.0-12
	4-9	14-18	14.00-42.00	0.06-0.09	0.0-1.0	5.0-12
	9	---	---	---	---	---
Rock outcrop, olivine basalt, andesite, or mudflow.						
Powderhouse medial sandy loam	0-2	---	---	---	---	---
	2-4	8-12	14.00-42.00	0.09-0.11	0.0-0.6	12-45
	4-11	8-12	14.00-42.00	0.04-0.11	0.0-0.6	12-16
	11-27	10-18	14.00-42.00	0.02-0.09	0.0-1.0	9.0-12
	27-36	10-12	14.00-42.00	0.02-0.08	0.0-0.6	4.0-9.0
	36-82	---	---	---	---	---
951:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam	0-4	10-15	14.00-42.00	0.06-0.11	0.0-1.0	5.0-12
	4-9	14-18	14.00-42.00	0.06-0.09	0.0-1.0	5.0-12
	9	---	---	---	---	---
Rock outcrop, andesite.						
Powderhouse medial sandy loam	0-2	---	---	---	---	---
	2-4	8-12	14.00-42.00	0.09-0.11	0.0-0.6	12-45
	4-11	8-12	14.00-42.00	0.04-0.11	0.0-0.6	12-16
	11-27	10-18	14.00-42.00	0.02-0.09	0.0-1.0	9.0-12
	27-36	10-12	14.00-42.00	0.02-0.08	0.0-0.6	4.0-9.0
	36-82	---	---	---	---	---
960:						
Surnuf gravelly loam, high elevation	0-0.5	---	---	---	---	---
	0.5-6	10-18	14.00-30.00	0.11-0.14	0.0-1.0	4.0-6.0
	6-10	18-25	4.00-14.00	0.13-0.17	1.0-3.0	1.0-2.0
	10-20	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	20-28	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	28-38	40-60	1.10-4.00	0.09-0.14	7.5-9.0	0.3-14
	38-52	40-60	0.90-4.00	0.09-0.14	7.5-9.0	0.3-14
	52-67	40-60	0.60-4.00	0.09-0.14	7.5-9.0	0.3-14
	67-84	40-60	0.42-4.00	0.09-0.14	7.5-9.0	0.3-14

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
961:						
Surnuf gravelly loam, high elevation	0-0.5	---	---	---	---	---
	0.5-6	10-18	14.00-30.00	0.11-0.14	0.0-1.0	4.0-6.0
	6-10	18-25	4.00-14.00	0.13-0.17	1.0-3.0	1.0-2.0
	10-20	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	20-28	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	28-38	40-60	1.10-4.00	0.09-0.14	7.5-9.0	0.3-14
	38-52	40-60	0.90-4.00	0.09-0.14	7.5-9.0	0.3-14
	52-67	40-60	0.60-4.00	0.09-0.14	7.5-9.0	0.3-14
	67-84	40-60	0.42-4.00	0.09-0.14	7.5-9.0	0.3-14
962:						
Surnuf gravelly loam, high elevation	0-0.5	---	---	---	---	---
	0.5-6	10-18	14.00-30.00	0.11-0.14	0.0-1.0	4.0-6.0
	6-10	18-25	4.00-14.00	0.13-0.17	1.0-3.0	1.0-2.0
	10-20	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	20-28	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	28-38	40-60	1.10-4.00	0.09-0.14	7.5-9.0	0.3-14
	38-52	40-60	0.90-4.00	0.09-0.14	7.5-9.0	0.3-14
	52-67	40-60	0.60-4.00	0.09-0.14	7.5-9.0	0.3-14
	67-84	40-60	0.42-4.00	0.09-0.14	7.5-9.0	0.3-14
963:						
Surnuf gravelly loam, high elevation	0-0.5	---	---	---	---	---
	0.5-6	10-18	14.00-30.00	0.11-0.14	0.0-1.0	4.0-6.0
	6-10	18-25	4.00-14.00	0.13-0.17	1.0-3.0	1.0-2.0
	10-20	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	20-28	35-40	1.40-4.00	0.11-0.17	6.0-7.5	0.8-1.0
	28-38	40-60	1.10-4.00	0.09-0.14	7.5-9.0	0.3-14
	38-52	40-60	0.90-4.00	0.09-0.14	7.5-9.0	0.3-14
	52-67	40-60	0.60-4.00	0.09-0.14	7.5-9.0	0.3-14
	67-84	40-60	0.42-4.00	0.09-0.14	7.5-9.0	0.3-14
990.						
Riverwash, frequently flooded						
991:						
Xerofluvents sandy loam, frequently flooded	0-6	2-10	14.00-42.00	0.02-0.11	0.0-0.0	1.0-4.0
	6-14	1-8	14.00-42.00	0.01-0.11	0.0-0.0	0.3-2.0
	14-26	1-8	14.00-42.00	0.01-0.11	0.0-0.0	0.3-2.0
	26-37	1-8	14.00-42.00	0.01-0.11	0.0-0.0	0.3-2.0
	37-43	4-12	14.00-42.00	0.07-0.14	0.0-0.0	1.0-4.0
	43-47	1-8	14.00-42.00	0.01-0.11	0.0-0.0	0.3-2.0
	47-54	1-8	14.00-42.00	0.01-0.11	0.0-0.0	0.3-2.0
	54-72	1-8	14.00-42.00	0.01-0.11	0.0-0.0	0.3-2.0
	72-80	1-8	14.00-42.00	0.01-0.11	0.0-0.0	0.3-2.0
995.						
Pits, gravel						
996.						
Dumps, excavated material						
997.						
Pits						

Table 21.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter
	In	Pct	um/sec	In/in	Pct	Pct
998. Dumps, landfill						
999. Water						
DAM. Dam, manmade						

Table 22.--Erosion Properties of the Soils

(See text for definitions of terms used in this table. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
100:						
Anita clay	0-1	.28	.28	1	4	86
	1-3	.28	.28			
	3-10	.28	.28			
	10-15	.28	.28			
	15-20	.02	.02			
Galt clay	0-3	.24	.24	2	4	86
	3-13	.28	.28			
	13-29	.32	.32			
	29-32	.32	.32			
	32-39	.02	.02			
104:						
Bosquejo clay	0-8	.28	.28	5	4	86
	8-19	.28	.28			
	19-24	.28	.28			
	24-37	.43	.43			
	37-44	.43	.43			
	44-46	.49	.49			
	46-60	.43	.43			
105:						
Busacca clay loam	0-3	.32	.32	5	4	86
	3-8	.32	.32			
	8-16	.32	.32			
	16-28	.37	.37			
	28-43	.37	.37			
	43-60	.32	.32			
	60-72	.32	.32			
108:						
Tuscan gravelly loam	0-2	.17	.28	2	7	48
	2-4	.24	.32			
	4-7	.24	.37			
	7-11	.15	.32			
	11	.02	.02			
Igo gravelly loam	0-1	.24	.37	1	7	48
	1-5	.24	.37			
	5-9	.17	.32			
	9	.02	.02			
Anita clay	0-1	.28	.28	1	4	86
	1-3	.24	.24			
	3-10	.24	.24			
	10-15	.24	.24			
	15-20	.02	.02			
109:						
Bosquejo clay loam	0-5	.32	.32	5	4	86
	5-24	.28	.28			
	24-40	.28	.28			
	40-60	.49	.49			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
110:						
Bosquejo silt loam, overwash, occasionally flooded	0-8	.28	.28	5	6	48
	8-22	.28	.28			
	22-40	.32	.32			
	40-55	.32	.37			
	55-70	.43	.43			
111yu:						
Auburn loam	0-17	.32	.37	1	5	56
	17	---	---			
Sobrante loam	0-5	.32	.37	2	5	56
	5-27	.32	.37			
	27-39	---	---			
	39	---	---			
114yu:						
Auburn gravelly loam	0-17	.20	.37	1	6	48
	17	---	---			
Sobrante gravelly loam	0-5	.24	.37	2	6	48
	5-35	.20	.32			
	35-40	---	---			
	40	---	---			
118:						
Xerorthents, tailings	0-3	.05	.28	5	4L	86
	3-8	.05	.28			
	8-21	.20	.28			
	21-26	.24	.28			
	26-35	.28	.28			
	35-48	.28	.28			
	48-59	.28	.28			
	59-81	.28	.28			
118co:						
Clear Lake clay, frequently flooded	0-4	.24	.24	5	4	86
	4-10	.24	.24			
	10-20	.24	.24			
	20-34	.24	.24			
	34-47	.24	.24			
	47-59	.24	.24			
	59-79	.24	.24			
119:						
Xerorthents, tailings	0-3	.05	.28	5	4L	86
	3-8	.05	.28			
	8-21	.20	.28			
	21-26	.24	.28			
	26-35	.28	.28			
	35-48	.28	.28			
	48-59	.28	.28			
	59-81	.28	.28			
Urban land.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
119yu:						
Auburn gravelly loam	0-17	.20	.37	1	6	48
	17	---	---			
Sobrante gravelly loam	0-5	.24	.37	2	6	48
	5-35	.20	.32			
	35-40	---	---			
	40	---	---			
Rock outcrop.						
120:						
Gridley taxadjunct clay loam	0-4	.32	.32	3	4	86
	4-9	.28	.28			
	9-15	.32	.32			
	15-21	.32	.32			
	21-60	.02	.02			
121:						
Boga loam	0-3	.43	.43	5	6	48
	3-6	.37	.37			
	6-14	.32	.32			
	14-29	.32	.32			
	29-53	.32	.32			
	53-73	.37	.37			
	73-80	.02	.02			
Loemstone loam	0-2	.43	.43	4	6	48
	2-4	.43	.43			
	4-10	.43	.43			
	10-18	.37	.37			
	18-23	.37	.37			
	23-32	.43	.43			
	32-40	.43	.43			
	40-48	.43	.43			
	48-57	.02	.02			
121su:						
Columbia fine sandy loam, frequently flooded	0-14	.32	.32	5	3	86
	14-60	.32	.32			
125:						
Gridley taxadjunct loam	0-10	.32	.32	3	5	56
	10-20	.28	.28			
	20-22	.28	.28			
	22-60	.02	.02			
Calcic Haploxerolls sandy loam	0-5	.20	.20	4	3	86
	5-17	.20	.20			
	17-20	.24	.24			
	20-33	.24	.24			
	33-44	.24	.24			
	44-72	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
126:						
Liveoak sandy loam	0-4	.20	.20	5	3	86
	4-17	.17	.17			
	17-37	.20	.20			
	37-48	.28	.28			
	48-61	.15	.20			
	61-71	.15	.17			
	71-75	.10	.17			
127:						
Gridley taxadjunct loam	0-10	.32	.32	3	5	56
	10-20	.28	.28			
	20-22	.28	.28			
	22-60	.02	.02			
130:						
Eastbiggs loam	0-3	.37	.37	3	6	48
	3-10	.37	.37			
	10-17	.43	.43			
	17-27	.28	.28			
	27-34	.02	.02			
	34-60	.02	.02			
133:						
Eastbiggs loam	0-3	.37	.37	3	6	48
	3-10	.37	.37			
	10-17	.43	.43			
	17-27	.28	.28			
	27-34	.02	.02			
	34-60	.02	.02			
Galt clay loam	0-6	.32	.32	2	4	86
	6-20	.37	.37			
	20-27	.37	.37			
	27-30	.37	.37			
	30	.02	.02			
136:						
Duric Xerarents, cut	0-3	.37	.37	2	4	86
	3-8	.37	.37			
	8-10	.37	.37			
	10-13	.28	.28			
	13	.02	.02			
Duric Xerarents, fill	0-5	.32	.32	4	4	86
	5-12	.37	.37			
	12-16	.28	.28			
	16-30	.32	.32			
	30-38	.28	.28			
	38-48	.28	.28			
	48	.02	.02			
Eastbiggs fine sandy loam, leveled	0-5	.24	.24	3	3	86
	5-12	.17	.17			
	12-18	.24	.24			
	18-23	.24	.24			
	23-26	.43	.43			
	26-30	.32	.32			
	30	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
138su:						
Liveoak sandy clay loam	0-13	.17	.17	5	5	56
	13-53	.17	.17			
	53-60	.20	.17			
139su:						
Liveoak taxadjunct loam, frequently flooded	0-6	.37	.37	3	6	48
	6-54	.37	.37			
	54-63	.02	.02			
	63-73	.37	.37			
Galt taxadjunct clay loam, frequently flooded	0-21	.32	.32	2	5	56
	21-22	.02	.02			
	22-25	.37	.37			
	25-26	.02	.02			
	26	---	---			
143su:						
Marcum clay loam	0-16	.32	.32	4	4	86
	16-28	.37	.37			
	28-40	.28	.28			
	40-43	.32	.32			
	43-62	---	---			
Gridley clay loam	0-19	.32	.32	3	6	48
	19-37	.28	.28			
	37	---	---			
149yu:						
Flanly sandy loam	0-9	.24	.28	3	3	86
	9-16	.24	.28			
	16-34	.32	.32			
	34-38	---	---			
150:						
Columbia stratified sand to fine sandy loam	0-5	.15	.15	5	3	86
	5-10	.24	.24			
	10-29	.49	.49			
	29-37	.37	.37			
	37-46	.15	.15			
	46-60	.43	.43			
150su:						
Olashes sandy loam	0-4	.28	.28	4	3	86
	4-52	.32	.37			
	52-60	.20	.17			
151yu:						
Flanly sandy loam	0-9	.24	.28	3	3	86
	9-16	.24	.28			
	16-34	.32	.32			
	34-38	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
152:						
Gianella fine sandy loam, frequently flooded	0-6	.28	.28	5	3	86
	6-15	.55	.55			
	15-20	.28	.28			
	20-22	.55	.55			
	22-27	.55	.55			
	27-32	.28	.28			
	32-43	.32	.32			
	43-64	.32	.32			
	64-80	.32	.32			
153:						
Gianella sandy loam, frequently flooded	0-6	.32	.32	5	3	86
	6-17	.43	.43			
	17-24	.43	.43			
	24-29	.37	.37			
	29-32	.28	.28			
	32-43	.37	.37			
	43-57	.37	.37			
	57-67	.37	.37			
	67-68	.37	.37			
	68-71	.43	.43			
	71-80	.43	.43			
	80-84	.43	.43			
154:						
Gianella silt loam, frequently flooded	0-2	.37	.37	5	5	56
	2-8	.24	.24			
	8-15	.37	.37			
	15-22	.32	.32			
	22-31	.28	.28			
	31-41	.43	.43			
	41-50	.55	.55			
	50-54	.55	.55			
	54-64	.55	.55			
	64-66	.55	.55			
	66-69	.43	.43			
	69-83	.20	.20			
158:						
Gianella fine sandy loam, occasionally flooded	0-3	.24	.24	5	3	86
	3-12	.24	.24			
	12-19	.32	.32			
	19-28	.24	.24			
	28-48	.32	.32			
	48-57	.17	.17			
	57-80	.20	.20			
160:						
Gianella loam, occasionally flooded	0-18	.37	.37	5	6	48
	18-42	.32	.32			
	42-52	.32	.32			
	52-70	.32	.32			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
161:						
Gianella fine sandy loam, rarely flooded	0-3	.24	.24	5	3	86
	3-12	.24	.24			
	12-19	.32	.32			
	19-28	.24	.24			
	28-48	.32	.32			
	48-57	.17	.17			
	57-80	.20	.20			
162:						
Gianella loam, rarely flooded	0-18	.37	.37	5	6	48
	18-42	.32	.32			
	42-52	.32	.32			
	52-70	.32	.32			
163yu:						
Holillipah loamy sand	0-6	.17	.20	5	2	134
	6-66	.17	.17			
165yu:						
Holland loam	0-15	.32	.32	5	5	56
	15-65	.24	.24			
Hoda loam	0-7	.28	.28	5	5	56
	7-14	.28	.28			
	14-72	.24	.24			
Hotaw loam	0-12	.28	.28	3	5	56
	12-34	.24	.37			
	34	---	---			
173yu:						
Hotaw loam	0-12	.28	.28	3	5	56
	12-34	.24	.37			
	34	---	---			
Chawanakee gravelly sandy loam	0-1	---	---	2	3	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
Holland loam	0-15	.32	.32	5	5	56
	15-65	.24	.24			
175:						
Farwell clay loam, rarely flooded	0-5	.32	.32	5	6	48
	5-9	.32	.32			
	9-18	.37	.37			
	18-26	.37	.37			
	26-33	.37	.37			
	33-43	.32	.32			
	43-57	.37	.37			
	57-72	.37	.37			
	72-81	.43	.43			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
176:						
Farwell loam, occasionally flooded-----	0-6	.32	.32	5	6	48
	6-20	.32	.32			
	20-36	.37	.37			
	36-50	.32	.32			
	50-60	.37	.37			
176yu:						
Jocal loam-----------	0-8	.32	.37	5	6	48
	8-73	.32	.43			
177:						
Farwell silt loam, occasionally flooded-----------	0-6	.43	.43	5	6	48
	6-11	.37	.37			
	11-22	.49	.49			
	22-33	.37	.37			
	33-39	.37	.37			
	39-49	.49	.49			
	49-62	.43	.43			
178:						
Arbuckle gravelly loam-----------	0-4	.28	.43	5	7	38
	4-9	.32	.49			
	9-20	.32	.49			
	20-32	.37	.49			
	32-49	.32	.49			
	49-68	.05	.24			
	68-86	.05	.24			
179:						
Moda taxadjunct loam-----------	0-2	.32	.43	2	5	56
	2-6	.32	.43			
	6-13	.37	.49			
	13-22	.32	.32			
	22	.02	.02			
Arbuckle gravelly loam-----------	0-4	.28	.43	5	7	38
	4-9	.32	.49			
	9-20	.32	.49			
	20-32	.37	.49			
	32-49	.32	.49			
	49-68	.05	.24			
	68-86	.05	.24			
180:						
Dodgeland silty clay loam, occasionally flooded-----------	0-4	.37	.37	5	4	86
	4-8	.37	.37			
	8-18	.37	.37			
	18-33	.37	.37			
	33-45	.37	.37			
	45-53	.43	.43			
	53-60	.43	.43			
	60-70	.43	.43			
	70-80	.43	.43			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
181:						
Dodgeland silty clay loam, frequently flooded	0-4	.37	.37	5	4	86
	4-8	.37	.37			
	8-18	.37	.37			
	18-33	.37	.37			
	33-45	.37	.37			
	45-53	.43	.43			
	53-60	.43	.43			
	60-70	.43	.43			
	70-80	.43	.43			
188yu:						
Mariposa taxadjunct gravelly loam	0-4	.20	.37	2	4	86
	4-23	.20	.37			
	23	---	---			
189:						
Esquon silt loam, overwash	0-4	.49	.49	4	5	56
	4-9	.49	.49			
	9-15	.55	.55			
	15-35	.32	.32			
	35-48	.37	.37			
	48-60	.43	.43			
	60	.02	.02			
189yu:						
Mariposa taxadjunct gravelly loam	0-4	.20	.37	2	4	86
	4-23	.20	.37			
	23	---	---			
196yu:						
Mildred cobbly loam	0-3	.37	.37	3	7	38
	3-9	.32	.43			
	9-23	.28	.37			
	23	---	---			
200:						
Parrott silt loam, occasionally flooded	0-2	.28	.28	5	5	56
	2-8	.43	.43			
	8-20	.43	.43			
	20-37	.43	.43			
	37-49	.49	.49			
	49-63	.49	.49			
	63-89	.55	.55			
201:						
Parrott silt loam, frequently flooded	0-2	.28	.28	5	5	56
	2-8	.43	.43			
	8-20	.43	.43			
	20-37	.43	.43			
	37-49	.49	.49			
	49-63	.49	.49			
	63-89	.55	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
203:						
Kusalslough silty clay loam, occasionally flooded	0-4	.43	.43	5	7	86
	4-12	.43	.43			
	12-21	.49	.49			
	21-31	.43	.43			
	31-41	.43	.43			
	41-57	.43	.43			
	57-69	.32	.32			
	69-80	.32	.32			
205:						
Parrott silt loam, frequently flooded	0-2	.28	.28	5	5	56
	2-8	.43	.43			
	8-20	.43	.43			
	20-37	.43	.43			
	37-49	.49	.49			
	49-63	.49	.49			
	63-89	.55	.55			
Vermet silt loam, frequently flooded	0-2	.37	.37	5	5	56
	2-8	.49	.49			
	8-13	.49	.49			
	13-16	.43	.43			
	16-26	.49	.49			
	26-41	.49	.49			
	41-62	.49	.49			
	62-72	.49	.49			
206:						
Islandbar sandy loam	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			
Chawanakee gravelly sandy loam	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
207:						
Islandbar sandy loam	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
207:						
Chawanakee gravelly sandy loam---------	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
208:						
Islandbar sandy loam--------------------	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			
Chawanakee gravelly sandy loam---------	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
209:						
Islandbar sandy loam--------------------	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			
Chawanakee gravelly sandy loam---------	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
210:						
Featherfalls sandy loam-----------------	0-1	---	---	5	3	86
	1-4	.43	.55			
	4-7	.43	.55			
	7-17	.24	.28			
	17-24	.24	.28			
	24-32	.24	.28			
	32-42	.28	.28			
	42-61	.28	.28			
	61-72	.28	.28			
	72-80	.10	.28			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
210:						
Islandbar sandy loam	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			
211:						
Featherfalls sandy loam	0-1	---	---	5	3	86
	1-4	.43	.55			
	4-7	.43	.55			
	7-17	.24	.28			
	17-24	.24	.28			
	24-32	.24	.28			
	32-42	.28	.28			
	42-61	.28	.28			
	61-72	.28	.28			
	72-80	.10	.28			
Islandbar sandy loam	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			
212:						
Featherfalls sandy loam	0-1	---	---	5	3	86
	1-4	.43	.55			
	4-7	.43	.55			
	7-17	.24	.28			
	17-24	.24	.28			
	24-32	.24	.28			
	32-42	.28	.28			
	42-61	.28	.28			
	61-72	.28	.28			
	72-80	.10	.28			
Islandbar sandy loam	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
213:						
Featherfalls sandy loam	0-1	---	---	5	3	86
	1-4	.43	.55			
	4-7	.43	.55			
	7-17	.24	.28			
	17-24	.24	.28			
	24-32	.24	.28			
	32-42	.28	.28			
	42-61	.28	.28			
	61-72	.28	.28			
	72-80	.10	.28			
Islandbar sandy loam	0-2	---	---	5	3	86
	2-5	.49	.55			
	5-9	.49	.55			
	9-27	.49	.55			
	27-36	.49	.55			
	36-47	.49	.55			
	47-58	.55	.55			
	58-62	.55	.55			
	62-72	.55	.55			
214:						
Crystalhill gravelly coarse sandy loam	0-2	---	---	5	4	86
	2-7	.32	.55			
	7-14	.37	.55			
	14-22	.32	.55			
	22-33	.37	.55			
	33-44	.28	.55			
	44-66	.43	.55			
	66	---	---			
Oregongulch gravelly sandy loam	0-1	---	---	3	4	86
	1-4	.28	.55			
	4-7	.37	.55			
	7-13	.32	.55			
	13-18	.28	.55			
	18-24	.20	.55			
	24-60	---	---			
Craigsaddle coarse sandy loam	0-5	.55	.55	4	3	86
	5-11	.55	.55			
	11-17	.49	.55			
	17-21	.49	.55			
	21-31	.32	.37			
	31-51	.28	.37			
	51-58	.17	.32			
	58-80	---	---			
Rock outcrop, trondhjemite.						
215:						
Crystalhill gravelly coarse sandy loam	0-2	---	---	5	4	86
	2-7	.32	.55			
	7-14	.37	.55			
	14-22	.32	.55			
	22-33	.37	.55			
	33-44	.28	.55			
	44-66	.43	.55			
	66	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
215:						
Oregongulch gravelly sandy loam--------	0-1	---	---	3	4	86
	1-4	.28	.55			
	4-7	.37	.55			
	7-13	.32	.55			
	13-18	.28	.55			
	18-24	.20	.55			
	24-60	---	---			
Craigsaddle coarse sandy loam----------	0-5	.55	.55	4	3	86
	5-11	.55	.55			
	11-17	.49	.55			
	17-21	.49	.55			
	21-31	.32	.37			
	31-51	.28	.37			
	51-58	.17	.32			
	58-80	---	---			
Rock outcrop, trondhjemite.						
216:						
Crystalhill gravelly coarse sandy loam	0-2	---	---	5	4	86
	2-7	.32	.55			
	7-14	.37	.55			
	14-22	.32	.55			
	22-33	.37	.55			
	33-44	.28	.55			
	44-66	.43	.55			
	66	---	---			
Oregongulch gravelly sandy loam--------	0-1	---	---	3	4	86
	1-4	.28	.55			
	4-7	.37	.55			
	7-13	.32	.55			
	13-18	.28	.55			
	18-24	.20	.55			
	24-60	---	---			
Craigsaddle coarse sandy loam----------	0-5	.55	.55	4	3	86
	5-11	.55	.55			
	11-17	.49	.55			
	17-21	.49	.55			
	21-31	.32	.37			
	31-51	.28	.37			
	51-58	.17	.32			
	58-80	---	---			
Rock outcrop, trondhjemite.						
217:						
Crystalhill gravelly coarse sandy loam	0-2	---	---	5	4	86
	2-7	.32	.55			
	7-14	.37	.55			
	14-22	.32	.55			
	22-33	.37	.55			
	33-44	.28	.55			
	44-66	.43	.55			
	66	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
217:						
Oregongulch gravelly sandy loam--------	0-1	---	---	3	4	86
	1-4	.28	.55			
	4-7	.37	.55			
	7-13	.32	.55			
	13-18	.28	.55			
	18-24	.20	.55			
	24-60	---	---			
Craigsaddle coarse sandy loam----------	0-5	.55	.55	4	3	86
	5-11	.55	.55			
	11-17	.49	.55			
	17-21	.49	.55			
	21-31	.32	.37			
	31-51	.28	.37			
	51-58	.17	.32			
	58-80	---	---			
Rock outcrop, trondhjemite.						
218:						
Rock outcrop, quartz diorite.						
Lithic Xerorthents gravelly sandy loam	0-2	---	---	1	4	86
	2-4	.37	.55			
	4-8	.43	.55			
	8	---	---			
Chawanakee gravelly sandy loam---------	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
219:						
Rock outcrop, quartz diorite.						
Lithic Xerorthents gravelly sandy loam	0-2	---	---	1	4	86
	2-4	.37	.55			
	4-8	.43	.55			
	8	---	---			
Chawanakee gravelly sandy loam---------	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
220:						
Esquon clay, frequently flooded--------	0-10	.28	.28	4	4	86
	10-22	.32	.32			
	22-40	.32	.32			
	40-50	.43	.43			
	50	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
220:						
Clear Lake silty clay loam, overwash---	0-0.5	.32	.32	5	4	86
	0.5-7	.32	.32			
	7-19	.37	.37			
	19-29	.37	.37			
	29-40	.49	.49			
	40-55	.49	.49			
	55-80	.49	.49			
221yu:						
Sites loam----------	0-6	.28	.37	5	5	56
	6-16	.28	.43			
	16-51	.28	.37			
	51-61	.32	.43			
	61	---	---			
222yu:						
Sites loam----------	0-6	.28	.37	5	5	56
	6-16	.28	.43			
	16-51	.28	.37			
	51-61	.32	.43			
	61	---	---			
225yu:						
Sites gravelly loam, bedrock substratum----------	0-5	.24	.37	4	6	48
	5-53	.17	.37			
	53	---	---			
226yu:						
Sites gravelly loam, bedrock substratum----------	0-5	.24	.37	4	6	48
	5-53	.17	.37			
	53	---	---			
227yu:						
Sites gravelly loam, bedrock substratum----------	0-5	.24	.37	4	6	48
	5-53	.17	.37			
	53	---	---			
242yu:						
Surnuf loam----------	0-12	.32	.37	5	6	48
	12-77	.24	.37			
243yu:						
Surnuf loam----------	0-12	.32	.37	5	6	48
	12-77	.24	.37			
244yu:						
Surnuf loam----------	0-12	.32	.37	5	6	48
	12-77	.24	.37			
245:						
Surnuf loam----------	0-12	.32	.37	5	6	48
	12-77	.24	.37			
248yu:						
Trainer loam----------	0-9	.32	.32	5	6	48
	9-36	.32	.32			
	36-66	.32	.32			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
250:						
Llanoseco, occasionally flooded	0-8	.37	.37	5	4	86
	8-18	.37	.37			
	18-28	.43	.43			
	28-41	.43	.43			
	41-57	.43	.43			
	57-71	.49	.49			
	71-83	.49	.49			
	83-89	.49	.49			
	89-93	.02	.02			
252:						
Whitecabin silty clay, occasionally flooded	0-5	.32	.32	4	4	86
	5-13	.32	.32			
	13-26	.32	.32			
	26-35	.32	.32			
	35-45	.37	.37			
	45-53	.37	.37			
	53-63	.02	.02			
	63-72	.02	.02			
Ordferry silty clay, occasionally flooded	0-3	.32	.32	2	4	86
	3-6	.37	.37			
	6-13	.32	.32			
	13-25	.37	.37			
	25-29	.43	.43			
	29-33	.02	.02			
	33-40	.02	.02			
252yu:						
Woodleaf gravelly loam	0-9	.20	.37	2	7	38
	9-28	.10	.37			
	28	---	---			
253yu:						
Woodleaf gravelly loam	0-9	.20	.37	2	7	38
	9-28	.10	.37			
	28	---	---			
255:						
Whitecabin silty clay loam, occasionally flooded	0-8	.37	.37	4	4	86
	8-20	.32	.32			
	20-44	.32	.32			
	44-60	.02	.02			
Ordferry silty clay, occasionally flooded	0-3	.32	.32	2	4	86
	3-6	.37	.37			
	6-13	.32	.32			
	13-25	.37	.37			
	25-29	.43	.43			
	29-33	.02	.02			
	33-40	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
256:						
Whitecabin silt loam, occasionally flooded	0-6	.43	.43	4	6	48
	6-13	.32	.32			
	13-27	.32	.32			
	27-42	.32	.32			
	42-54	.37	.37			
	54-62	.02	.02			
257:						
Llanoseco, frequently flooded	0-8	.37	.37	5	4	86
	8-18	.37	.37			
	18-28	.43	.43			
	28-41	.43	.43			
	41-57	.43	.43			
	57-71	.49	.49			
	71-83	.49	.49			
	83-89	.49	.49			
	89-93	.02	.02			
258:						
Codora, occasionally flooded	0-6	.37	.37	5	4	86
	6-11	.37	.37			
	11-22	.37	.37			
	22-38	.43	.43			
	38-60	.43	.43			
260:						
Ordferry silty clay, occasionally flooded	0-3	.32	.32	2	4	86
	3-6	.37	.37			
	6-13	.32	.32			
	13-25	.37	.37			
	25-29	.43	.43			
	29-33	.02	.02			
	33-40	.02	.02			
280:						
Columbia taxadjunct stratified very fine sandy loam	0-8	.24	.24	5	3	86
	8-10	.28	.28			
	10-19	.24	.24			
	19-30	.24	.24			
	30-40	.55	.55			
	40-60	.55	.55			
290:						
Perkins gravelly loam	0-8	.24	.43	5	6	48
	8-24	.24	.43			
	24-38	.05	.32			
	38-48	.05	.32			
	48-73	.15	.24			
300:						
Redsluff gravelly loam	0-2	.15	.28	3	7	48
	2-5	.17	.32			
	5-12	.20	.32			
	12-21	.15	.32			
	21-29	.20	.37			
	29-37	.20	.37			
	37-42	.05	.20			
	42-80	.02	.15			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
301:						
Wafap gravelly loam----------	0-1	.15	.28	4	7	38
	1-5	.15	.32			
	5-13	.10	.28			
	13-32	.02	.28			
	32-39	.02	.28			
	39-46	.02	.15			
	46	.02	.02			
Hamslough clay----------	0-3	.17	.20	2	4	86
	3-14	.15	.24			
	14-19	.05	.28			
	19-27	.02	.15			
	27	.02	.02			
302:						
Redtough loam----------	0-1	.24	.28	1	5	56
	1-7	.24	.37			
	7-13	.17	.37			
	13	.02	.02			
Redswale cobbly loam----------	0-1	.17	.32	1	6	56
	1-7	.17	.43			
	7	.02	.02			
303:						
Munjar gravelly loam----------	0-2	.24	.32	2	6	48
	2-5	.17	.37			
	5-9	.24	.37			
	9-16	.17	.37			
	16-22	.10	.43			
	22-31	.05	.28			
	31-46	.02	.02			
Tuscan taxadjunct gravelly clay loam---	0-2	.20	.28	2	5	56
	2-5	.24	.32			
	5-13	.24	.32			
	13-23	.20	.32			
	23-29	.10	.37			
	29	.02	.02			
Galt clay----------	0-3	.24	.24	2	4	86
	3-13	.28	.28			
	13-29	.32	.32			
	29-32	.32	.32			
	32-39	.02	.02			
304:						
Redtough loam----------	0-1	.24	.28	1	5	56
	1-7	.24	.37			
	7-13	.17	.37			
	13	.02	.02			
305:						
Redtough gravelly loam----------	0-2	.24	.37	1	6	48
	2-5	.20	.32			
	5-8	.20	.32			
	8-15	.24	.28			
	15	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
305:						
Redswale loam	0-1	.37	.37	1	5	56
	1-5	.15	.32			
	5	.02	.02			
Anita, gravelly duripan	0-3	.17	.24	2	5	56
	3-8	.15	.28			
	8-15	.17	.28			
	15	.02	.02			
306:						
Duric Xerarents, fill	0-8	.43	.43	2	6	48
	8-14	.20	.20			
	14-20	.28	.28			
	20-36	.24	.24			
	36-40	.32	.32			
	40	.02	.02			
Duric Xerarents, cut	0-13	.24	.24	1	3	86
	13-15	.20	.28			
	15	.02	.02			
307:						
Duric Xerarents clay loam, leveled	0-2	.32	.32	1	3	86
	2-12	.28	.28			
	12	.02	.02			
310:						
Kimball loam	0-2	.37	.37	3	5	56
	2-4	.43	.43			
	4-6	.43	.43			
	6-10	.43	.43			
	10-17	.43	.43			
	17-34	.32	.32			
	34-46	.24	.24			
	46-64	.24	.24			
317:						
Thompsonflat loam	0-2	.32	.43	5	5	56
	2-5	.28	.49			
	5-12	.32	.49			
	12-19	.28	.49			
	19-29	.17	.43			
	29-35	.10	.32			
	35-43	.05	.28			
	43-80	.05	.28			
318:						
Thompsonflat fine sandy loam	0-3	.20	.28	5	3	86
	3-7	.17	.20			
	7-11	.15	.20			
	11-15	.10	.17			
	15-22	.10	.24			
	22-35	.05	.28			
	35-45	.05	.28			
	45-53	.05	.28			
	53-66	.05	.28			
	66-80	.02	.28			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
318:						
Oroville gravelly fine sandy loam------	0-2	.24	.37	2	4	86
	2-6	.15	.24			
	6-13	.20	.32			
	13-17	.15	.28			
	17-23	.10	.20			
	23-31	.02	.02			
	31-60	.02	.02			
320:						
Vistarobles sandy loam-----------------	0-5	.17	.20	1	3	86
	5-10	.15	.17			
	10-14	.10	.15			
	14-34	.02	.02			
	34-40	.10	.20			
Redding loam----------------------------	0-4	.28	.32	2	6	48
	4-11	.28	.32			
	11-24	.28	.32			
	24-35	.17	.20			
	35-40	.02	.02			
321:						
Durixeralfs, fine-loamy, gravelly fine sandy loam----------------------------	0-1	.17	.32	2	4	86
	1-5	.15	.32			
	5-10	.20	.37			
	10-18	.20	.37			
	18-24	.10	.32			
	24-27	.05	.24			
	27	.02	.02			
Durixeralfs, loamy-skeletal, gravelly fine sandy loam-----------------------	0-1	.20	.32	1	4	86
	1-4	.24	.43			
	4-9	.10	.37			
	9	.02	.02			
Typic Petraquepts silty clay-----------	0-3	.24	.32	1	4	86
	3-11	.15	.32			
	11	.02	.02			
330:						
Wilsoncreek loam, occasionally flooded	0-7	.37	.37	5	5	56
	7-14	.37	.37			
	14-25	.37	.37			
	25-34	.32	.32			
	34-44	.32	.32			
	44-60	.32	.32			
Trainer loam, occasionally flooded-----	0-7	.37	.37	5	5	56
	7-13	.37	.37			
	13-26	.43	.43			
	26-36	.43	.43			
	36-46	.24	.24			
	46-61	.28	.28			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
331:						
Thompsonflat loam	0-2	.32	.43	5	5	56
	2-5	.28	.49			
	5-12	.32	.49			
	12-19	.28	.49			
	19-29	.17	.43			
	29-35	.10	.32			
	35-43	.05	.28			
	43-80	.05	.28			
335:						
Galt clay loam	0-6	.32	.32	2	4	86
	6-20	.37	.37			
	20-27	.37	.37			
	27-30	.37	.37			
	30	.02	.02			
336:						
Galt clay	0-3	.24	.24	2	4	86
	3-13	.28	.28			
	13-29	.32	.32			
	29-32	.32	.32			
	32-39	.02	.02			
337:						
Galt clay loam	0-6	.32	.32	2	4	86
	6-20	.37	.37			
	20-27	.37	.37			
	27-30	.37	.37			
	30	.02	.02			
338:						
Oxyaquic Xerofluvents silt loam	0-6	.49	.49	5	3	86
	6-20	.55	.55			
	20-32	.24	.24			
	32-36	.28	.28			
	36-46	.24	.24			
	46-50	.55	.55			
	50-55	.28	.28			
	55-60	.55	.55			
339:						
Oxyaquic Xerofluvents sandy loam, frequently flooded	0-8	.20	.20	5	3	86
	8-12	.24	.24			
	12-16	.37	.37			
	16-60	.24	.24			
340:						
Rock outcrop, Lovejoy basalt.						
Thermalrocks very gravelly loam	0-1	.10	.28	1	6	48
	1-5	.05	.28			
	5	---	---			
Campbellhills gravelly loam	0-2	.15	.28	3	6	48
	2-7	.15	.28			
	7-17	.10	.32			
	17-29	.10	.32			
	29-39	.05	.37			
	39-50	.02	.37			
	50	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
341:						
Elsey loam	0-3	.20	.28	2	5	56
	3-8	.17	.28			
	8-17	.17	.37			
	17-25	.17	.37			
	25-32	.17	.43			
	32-38	.15	.43			
	38	---	---			
Beatsonhollow gravelly loam	0-3	.20	.28	1	6	48
	3-10	.10	.24			
	10-17	.10	.37			
	17	---	---			
Campbellhills gravelly loam	0-2	.15	.28	3	6	48
	2-7	.15	.28			
	7-17	.10	.32			
	17-29	.10	.32			
	29-39	.05	.37			
	39-50	.02	.37			
	50	---	---			
Rock outcrop, Lovejoy basalt.						
342:						
Thermalrocks very gravelly loam	0-1	.10	.28	1	6	48
	1-5	.05	.28			
	5	---	---			
Beatsonhollow taxadjunct fine sandy loam	0-1	.17	.20	1	3	86
	1-6	.17	.28			
	6-10	.17	.28			
	10-15	.17	.28			
	15-18	.10	.28			
	18	---	---			
Rock outcrop, Lovejoy basalt.						
343:						
Coalcanyon very cobbly loam	0-2	.10	.28	5	7	38
	2-11	.10	.28			
	11-27	.10	.32			
	27-43	.10	.37			
	43-65	.05	.43			
Coonhollow gravelly loam	0-3	.15	.28	3	6	48
	3-11	.10	.28			
	11-22	.10	.32			
	22-32	.10	.37			
	32-45	.05	.32			
	45-50	---	---			
	50	---	---			
344:						
Coalcanyon very cobbly loam	0-2	.10	.28	5	7	38
	2-11	.10	.28			
	11-27	.10	.32			
	27-43	.10	.37			
	43-65	.05	.43			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
344:						
Coonhollow gravelly loam----------	0-3	.15	.28	3	6	48
	3-11	.10	.28			
	11-22	.10	.32			
	22-32	.10	.37			
	32-45	.05	.32			
	45-50	---	---			
	50	---	---			
Rock outcrop, Lovejoy basalt.						
346:						
Cherotable loam----------	0-2	.24	.28	3	6	48
	2-8	.28	.37			
	8-14	.28	.37			
	14-21	.24	.37			
	21-30	.24	.37			
	30-45	.05	.20			
	45	---	---			
Elsey loam----------	0-3	.20	.28	2	5	56
	3-8	.17	.28			
	8-17	.17	.37			
	17-25	.17	.37			
	25-32	.17	.43			
	32-38	.15	.43			
	38	---	---			
347:						
Haplic Palexeralfs loam----------	0-3	.24	.32	5	5	56
	3-9	.20	.32			
	9-22	.10	.28			
	22-31	.02	.15			
	31-45	.02	.17			
	45-52	.02	.15			
	52-64	.02	.10			
353:						
Cherokeespring gravelly silt loam------	0-3	.20	.28	5	5	56
	3-7	.20	.28			
	7-16	.24	.37			
	16-30	.20	.37			
	30-42	.20	.43			
	42-60	.17	.43			
	60-68	.15	.43			
355:						
Coalcanyon very cobbly loam----------	0-2	.10	.28	5	7	38
	2-11	.10	.28			
	11-27	.10	.32			
	27-43	.10	.37			
	43-65	.05	.43			
Talus.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
356:						
Coalcanyon very cobbly loam----------	0-2	.10	.28	5	7	38
	2-11	.10	.28			
	11-27	.10	.32			
	27-43	.10	.37			
	43-65	.05	.43			
Rock outcrop, basalt cliffs.						
Talus.						
Coonhollow gravelly loam----------	0-3	.15	.28	3	6	48
	3-11	.10	.28			
	11-22	.10	.32			
	22-32	.10	.37			
	32-45	.05	.32			
	45-50	---	---			
	50	---	---			
360:						
Typic Xerofluvents, coarse-loamy-------	0-3	.10	.20	5	2	134
	3-11	.10	.20			
	11-20	.10	.20			
	20-24	.15	.20			
	24-31	.10	.20			
	31-45	.55	.64			
	45-51	.10	.20			
	51-66	.49	.64			
	66-84	.05	.20			
	84-95	.02	.20			
Typic Xerofluvents, sandy-skeletal-----	0-3	.10	.20	5	2	134
	3-9	.10	.28			
	9-16	.05	.20			
	16-22	.05	.20			
	22-30	.10	.20			
	30-40	.05	.15			
	40-50	.10	.15			
	50-98	.02	.15			
361:						
Typic Xerofluvents, sandy-skeletal-----	0-3	.10	.20	5	2	134
	3-9	.10	.28			
	9-16	.05	.20			
	16-22	.05	.20			
	22-30	.10	.20			
	30-40	.05	.15			
	40-50	.10	.15			
	50-98	.02	.15			
362:						
Ultic Haploxeralfs, sandstone, low elevation, very deep----------	0-2	.37	.32	5	3	86
	2-8	.28	.24			
	8-18	.28	.24			
	18-28	.28	.24			
	28-39	.32	.24			
	39-49	.32	.24			
	49-56	.32	.28			
	56-70	.43	.43			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
362:						
Ultic Haploxeralfs, sandstone, low elevation, deep	0-3	.32	.24	4	3	86
	3-8	.28	.24			
	8-15	.32	.20			
	15-24	.37	.32			
	24-32	.49	.49			
	32-41	.43	.43			
	41	---	---			
363:						
Ultic Haploxeralfs, sandstone, low elevation, very deep	0-2	.37	.32	5	3	86
	2-8	.28	.24			
	8-18	.28	.24			
	18-28	.28	.24			
	28-39	.32	.24			
	39-49	.32	.24			
	49-56	.32	.28			
	56-70	.43	.43			
Ultic Haploxeralfs, sandstone, low elevation, deep	0-3	.32	.24	4	3	86
	3-8	.28	.24			
	8-15	.32	.20			
	15-24	.37	.32			
	24-32	.49	.49			
	32-41	.43	.43			
	41	---	---			
364:						
Ultic Haploxeralfs, sandstone, low elevation, deep	0-3	.32	.24	4	3	86
	3-8	.28	.24			
	8-15	.32	.20			
	15-24	.37	.32			
	24-32	.49	.49			
	32-41	.43	.43			
	41	---	---			
Ultic Haploxeralfs, sandstone, low elevation, very deep	0-2	.37	.32	5	3	86
	2-8	.28	.24			
	8-18	.28	.24			
	18-28	.28	.24			
	28-39	.32	.24			
	39-49	.32	.24			
	49-56	.32	.28			
	56-70	.43	.43			
365:						
Palexerults gravelly loam	0-2	.28	.43	5	5	56
	2-12	.20	.43			
	12-20	.28	.37			
	20-29	.32	.37			
	29-46	.37	.37			
	46-65	.37	.37			
	65	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
366:						
Palexerults gravelly loam	0-2	.28	.43	5	5	56
	2-12	.20	.43			
	12-20	.28	.37			
	20-29	.32	.37			
	29-46	.37	.37			
	46-65	.37	.37			
	65	---	---			
370:						
Palexerults gravelly loam	0-2	.28	.43	5	5	56
	2-12	.20	.43			
	12-20	.28	.37			
	20-29	.32	.37			
	29-46	.37	.37			
	46-65	.37	.37			
	65	---	---			
375:						
Wickscorner loam	0-2	.20	.28	5	6	48
	2-8	.28	.37			
	8-22	.15	.32			
	22-38	.15	.32			
	38-59	.05	.20			
	59-72	.02	.15			
	72-84	.02	.15			
376:						
Flagcanyon gravelly loam	0-3	.15	.28	2	6	48
	3-9	.10	.28			
	9-14	.10	.37			
	14-30	.10	.32			
	30-53	.02	.20			
	53-65	.02	.20			
Wickscorner loam	0-2	.20	.28	5	6	48
	2-8	.28	.37			
	8-22	.15	.32			
	22-38	.15	.32			
	38-59	.05	.20			
	59-72	.02	.15			
	72-84	.02	.15			
377:						
Flagcanyon taxadjunct fine sandy loam	0-3	.24	.32	2	3	86
	3-7	.28	.37			
	7-16	.24	.32			
	16-23	.10	.28			
	23-31	.10	.32			
	31-63	.02	.24			
Durixeralfs, clayey-skeletal, loam	0-1	.37	.37	1	5	56
	1-4	.24	.32			
	4-9	.10	.28			
	9-15	.05	.24			
	15-60	.02	.20			
Duraquerts gravelly clay	0-3	.20	.32	2	5	56
	3-6	.24	.37			
	6-15	.24	.32			
	15-21	.24	.37			
	21-23	.10	.37			
	23-60	.10	.28			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
400:						
Subaco taxadjunct clay	0-8	.20	.20	2	7	38
	8-16	.37	.37			
	16-29	.37	.37			
	29-35	.32	.32			
	35-42	.02	.02			
	40-60	.49	.49			
415:						
Ignord fine sandy loam	0-4	.15	.15	5	3	86
	4-14	.20	.20			
	14-25	.24	.24			
	25-32	.28	.28			
	32-53	.28	.28			
	53-58	.28	.28			
	58-77	.28	.28			
416:						
Calcic Haploxerolls sandy loam	0-5	.20	.20	4	3	86
	5-17	.20	.20			
	17-20	.24	.24			
	20-33	.24	.24			
	33-44	.24	.24			
	44-72	.02	.02			
418:						
Almendra loam	0-4	.28	.28	5	6	48
	4-14	.32	.32			
	14-29	.37	.37			
	29-40	.43	.43			
	40-52	.43	.43			
	52-74	.32	.32			
	74-86	.32	.32			
419:						
Conejo fine sandy loam, overwash	0-17	.37	.37	5	3	86
	17-35	.24	.24			
	35-45	.37	.37			
	45-56	.37	.37			
	56-62	.43	.43			
	62-70	.43	.43			
	70-72	.43	.43			
420:						
Conejo clay loam	0-5	.24	.24	5	6	48
	5-19	.24	.24			
	19-30	.28	.28			
	30-48	.37	.37			
	48-70	.28	.28			
425:						
Vina fine sandy loam	0-3	.24	.24	5	3	86
	3-11	.28	.28			
	11-23	.24	.24			
	23-37	.24	.28			
	37-50	.24	.28			
	50-54	.24	.24			
	54-80	.24	.24			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
426:						
Vina loam	0-4	.28	.28	5	5	56
	4-15	.32	.32			
	15-28	.37	.37			
	28-44	.37	.37			
	44-63	.43	.43			
	63-72	.43	.43			
439:						
Oxyaquic Xerofluvents clay	0-10	.24	.24	5	4	86
	10-13	.32	.32			
	13-21	.32	.32			
	21-27	.55	.55			
	27-32	.49	.49			
	32-37	.49	.49			
	37-55	.24	.24			
	55-63	.24	.24			
	63-65	.02	.02			
	65-80	.24	.24			
440:						
Oxyaquic Xerofluvents silt loam, frequently flooded	0-9	.49	.49	5	3	86
	9-18	.17	.17			
	18-25	.55	.55			
	25-33	.64	.64			
	33-44	.43	.43			
	44-51	.49	.49			
	51-60	.28	.28			
441:						
Oxyaquic Xerofluvents very fine sandy loam	0-6	.24	.24	5	3	86
	6-20	.49	.49			
	20-30	.49	.49			
	30-43	.64	.64			
	43-55	.49	.49			
	55-72	.64	.64			
	72-75	.28	.28			
442:						
Durixerolls clay loam	0-6	.24	.24	3	6	48
	6-12	.37	.37			
	12-24	.37	.37			
	24-33	.43	.43			
	33	.02	.02			
Haploxerolls clay loam	0-5	.24	.24	4	4	86
	5-18	.28	.28			
	18-29	.32	.32			
	29-44	.37	.37			
	44-57	.43	.43			
	57	---	---			
443:						
Durixerolls loam	0-4	.32	.32	3	6	48
	4-10	.37	.37			
	10-17	.37	.37			
	17-23	.37	.37			
	23-26	.43	.43			
	26	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
443:						
Haploxerolls loam	0-5	.24	.24	4	6	48
	5-16	.28	.28			
	16-27	.32	.32			
	27-40	.37	.37			
	40-48	.37	.37			
	48-52	.28	.28			
	52	.02	.02			
445:						
Chico loam	0-5	.32	.32	5	6	48
	5-10	.32	.32			
	10-21	.37	.37			
	21-32	.37	.37			
	32-50	.43	.43			
	50-70	.43	.43			
	70-80	.43	.43			
447:						
Charger fine sandy loam	0-3	.17	.24	3	3	86
	3-7	.24	.28			
	7-15	.32	.32			
	15-32	.24	.28			
	32-42	.24	.28			
	42-53	.24	.28			
	53-63	.28	.28			
	63-80	.05	.28			
448:						
Haploxerolls clay loam	0-5	.17	.17	5	4	86
	5-10	.24	.24			
	10-24	.32	.32			
	24-39	.32	.32			
	39-66	.43	.43			
449:						
Haploxerolls loam	0-4	.28	.28	5	6	48
	4-10	.32	.32			
	10-24	.37	.37			
	24-36	.43	.43			
	36-52	.43	.43			
	52-60	.28	.28			
500:						
Lofgren clay	0-5	.20	.20	5	4	86
	5-12	.24	.24			
	12-29	.24	.24			
	29-38	.24	.24			
	38-44	.24	.24			
	44-47	.43	.43			
	47-62	.02	.02			
	62-82	.02	.02			
Blavo clay	0-5	.20	.20	3	4	86
	5-16	.24	.24			
	16-24	.24	.24			
	24-30	.24	.24			
	30-36	.37	.37			
	36-60	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
501:						
Lofgren clay, occasionally flooded-----	0-5	.20	.20	5	4	86
	5-12	.24	.24			
	12-22	.24	.24			
	22-30	.24	.24			
	30-41	.24	.24			
	41-45	.43	.43			
	45-60	.02	.02			
Blavo clay, occasionally flooded-------	0-6	.20	.20	3	4	86
	6-10	.24	.24			
	10-22	.24	.24			
	22-29	.24	.24			
	29-36	.37	.37			
	36-42	.02	.02			
502:						
Blavo silt loam, overwash, occasionally flooded----------	0-7	.49	.49	3	4	86
	7-14	.24	.24			
	14-22	.24	.24			
	22-29	.24	.24			
	29-36	.28	.28			
	36-50	.02	.02			
519:						
Edjobe silty clay----------	0-8	.28	.28	5	4	86
	8-25	.32	.32			
	25-32	.32	.32			
	32-48	.49	.49			
	48-60	.49	.49			
	60-69	.49	.49			
	69-75	.02	.02			
520:						
Esquon clay----------	0-5	.28	.28	4	4	86
	5-11	.32	.32			
	11-22	.32	.32			
	22-35	.37	.37			
	35-46	.43	.43			
	46-50	.43	.43			
	50-56	.49	.49			
	56-67	.02	.02			
Neerdobe clay----------	0-5	.24	.24	3	4	86
	5-15	.28	.28			
	15-23	.28	.28			
	23-28	.28	.28			
	28-33	.32	.32			
	33-38	.55	.55			
	38-56	.02	.02			
521:						
Neerdobe silt loam, overwash----------	0-7	.49	.49	3	3	86
	7-16	.49	.49			
	16-20	.28	.28			
	20-33	.24	.24			
	33-47	.28	.28			
	47-52	.02	.02			
	52-60	.28	.28			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
522:						
Clear Lake silty clay loam, overwash---	0-6	.32	.32	5	4	86
	6-12	.32	.32			
	12-35	.37	.37			
	35-50	.37	.37			
	50-60	.49	.49			
	60-70	.49	.49			
	70-72	.49	.49			
523:						
Esquon silty clay loam, overwash-------	0-10	.43	.43	4	4	86
	10-18	.32	.32			
	18-46	.32	.32			
	46-60	.02	.02			
525:						
Govstanford loam-----------------------	0-3	.37	.37	5	5	56
	3-11	.43	.43			
	11-18	.28	.28			
	18-25	.55	.55			
	25-34	.55	.55			
	34-42	.24	.24			
	42-61	.32	.32			
	61-72	.32	.32			
526:						
Govstanford loam, occasionally flooded	0-3	.37	.37	5	5	56
	3-11	.43	.43			
	11-18	.28	.28			
	18-25	.55	.55			
	25-34	.55	.55			
	34-42	.24	.24			
	42-61	.32	.32			
	61-72	.32	.32			
528:						
Neerdobe clay loam----------------------	0-10	.28	.28	3	4	86
	10-18	.28	.28			
	18-25	.32	.32			
	25	.02	.02			
550:						
Dunstone loam, dry----------------------	0-2	.28	.28	2	5	56
	2-7	.37	.37			
	7-10	.37	.37			
	10-16	.32	.37			
	16	---	---			
Loafercreek silt loam, dry-------------	0-2	.28	.28	3	5	56
	2-4	.32	.37			
	4-11	.28	.28			
	11-20	.32	.37			
	20-29	.37	.37			
	29	---	---			
551:						
Dunstone loam, dry----------------------	0-2	.28	.28	2	5	56
	2-7	.37	.37			
	7-10	.37	.37			
	10-16	.32	.37			
	16	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
551:						
Lomarica loam	0-1	.17	.17	3	5	56
	1-5	.17	.17			
	5-9	.28	.32			
	9-12	.24	.32			
	12-25	.05	.32			
	25-32	.02	.24			
	32	---	---			
Argonaut taxadjunct loam	0-2	.20	.28	3	5	56
	2-8	.24	.32			
	8-14	.17	.24			
	14-20	.17	.20			
	20-26	.20	.24			
	26-30	.24	.28			
	30	---	---			
552:						
Dunstone gravelly loam	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			
Loafercreek gravelly loam	0-0.5	---	---	3	5	56
	0.5-2	.17	.28			
	2-6	.15	.28			
	6-12	.28	.37			
	12-23	.24	.37			
	23-31	.28	.43			
	31-42	---	---			
	42	---	---			
553:						
Dunstone gravelly loam	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			
Loafercreek gravelly loam	0-0.5	---	---	3	5	56
	0.5-2	.17	.28			
	2-6	.15	.28			
	6-12	.28	.37			
	12-23	.24	.37			
	23-31	.28	.43			
	31-42	---	---			
	42	---	---			
554:						
Dunstone gravelly loam	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
554:						
Loafercreek gravelly loam	0-0.5	---	---	3	5	56
	0.5-2	.17	.28			
	2-6	.15	.28			
	6-12	.28	.37			
	12-23	.24	.37			
	23-31	.28	.43			
	31-42	---	---			
	42	---	---			
555:						
Dunstone gravelly loam	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			
Loafercreek gravelly loam	0-0.5	---	---	3	5	56
	0.5-2	.17	.28			
	2-6	.15	.28			
	6-12	.28	.37			
	12-23	.24	.37			
	23-31	.28	.43			
	31-42	---	---			
	42	---	---			
556:						
Mounthope loam	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
Hartsmill gravelly loam	0-1	---	---	5	6	48
	1-3	.15	.28			
	3-6	.15	.37			
	6-13	.15	.37			
	13-24	.15	.37			
	24-35	.10	.32			
	35-62	.05	.32			
	62	---	---			
557:						
Mounthope loam	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
557:						
Hartsmill gravelly loam	0-1	---	---	5	6	48
	1-3	.15	.28			
	3-6	.15	.37			
	6-13	.15	.37			
	13-24	.15	.37			
	24-35	.10	.32			
	35-62	.05	.32			
	62	---	---			
558:						
Hartsmill gravelly loam	0-1	---	---	5	6	48
	1-3	.15	.28			
	3-6	.15	.37			
	6-13	.15	.37			
	13-24	.15	.37			
	24-35	.10	.32			
	35-62	.05	.32			
	62	---	---			
Mounthope loam	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
559:						
Hartsmill gravelly loam	0-1	---	---	5	6	48
	1-3	.15	.28			
	3-6	.15	.37			
	6-13	.15	.37			
	13-24	.15	.37			
	24-35	.10	.32			
	35-62	.05	.32			
	62	---	---			
Mounthope loam	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
560:						
Hartsmill gravelly loam	0-1	---	---	5	6	48
	1-3	.15	.28			
	3-6	.15	.37			
	6-13	.15	.37			
	13-24	.15	.37			
	24-35	.10	.32			
	35-62	.05	.32			
	62	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
560:						
Mounthope loam	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
561:						
Bigridge loam	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
Minniecreek loam	0-2	.20	.28	2	5	56
	2-8	.32	.37			
	8-15	.32	.37			
	15-24	.37	.37			
	24-32	.43	.43			
	32-75	---	---			
562:						
Bigridge loam	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
Minniecreek loam	0-2	.20	.28	2	5	56
	2-8	.32	.37			
	8-15	.32	.37			
	15-24	.37	.37			
	24-32	.43	.43			
	32-75	---	---			
563:						
Bigridge loam	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
563:						
Minniecreek loam	0-2	.20	.28	2	5	56
	2-8	.32	.37			
	8-15	.32	.37			
	15-24	.37	.37			
	24-32	.43	.43			
	32-75	---	---			
564:						
Bigridge loam	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
Minniecreek loam	0-2	.20	.28	2	5	56
	2-8	.32	.37			
	8-15	.32	.37			
	15-24	.37	.37			
	24-32	.43	.43			
	32-75	---	---			
565:						
Dunstone loam, dry	0-2	.28	.28	2	5	56
	2-7	.37	.37			
	7-10	.37	.37			
	10-16	.32	.37			
	16	---	---			
Argonaut taxadjunct loam	0-2	.20	.28	3	5	56
	2-8	.24	.32			
	8-14	.17	.24			
	14-20	.17	.20			
	20-26	.20	.24			
	26-30	.24	.28			
	30	---	---			
Sunnyslope loam	0-2	.20	.28	2	5	56
	2-6	.20	.32			
	6-10	.10	.37			
	10-14	.05	.32			
	14	---	---			
566:						
Dunstone loam, dry	0-2	.28	.28	2	5	56
	2-7	.37	.37			
	7-10	.37	.37			
	10-16	.32	.37			
	16	---	---			
Loafercreek silt loam, dry	0-2	.28	.28	3	5	56
	2-4	.32	.37			
	4-11	.28	.28			
	11-20	.32	.37			
	20-29	.37	.37			
	29	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
566:						
Katskillhill loam	0-2	.28	.28	4	5	56
	2-8	.28	.37			
	8-12	.10	.32			
	12-19	.20	.20			
	19-29	.20	.20			
	29-42	.15	.20			
	42	---	---			
567:						
Dunstone loam, dry	0-2	.28	.28	2	5	56
	2-7	.37	.37			
	7-10	.37	.37			
	10-16	.32	.37			
	16	---	---			
Loafercreek silt loam, dry	0-2	.28	.28	3	5	56
	2-4	.32	.37			
	4-11	.28	.28			
	11-20	.32	.37			
	20-29	.37	.37			
	29	---	---			
Argonaut taxadjunct loam	0-2	.20	.28	3	5	56
	2-8	.24	.32			
	8-14	.17	.24			
	14-20	.17	.20			
	20-26	.20	.24			
	26-30	.24	.28			
	30	---	---			
577:						
Parkshill coarse sandy loam	0-2	.05	.05	5	3	86
	2-8	.05	.05			
	8-18	.17	.17			
	18-26	.17	.17			
	26-35	.20	.20			
	35-53	.20	.20			
	53-61	.20	.20			
Flanly loam	0-2	.20	.24	2	5	56
	2-5	.15	.15			
	5-10	.24	.24			
	10-23	.17	.20			
	23-26	---	---			
Hurleton gravelly sandy loam	0-3	.10	.15	2	4	86
	3-7	.10	.15			
	7-12	.10	.17			
	12-16	.05	.17			
	16-19	.05	.17			
	19-25	.02	.20			
	25	---	---			
578:						
Flanly loam	0-2	.20	.24	2	5	56
	2-5	.15	.15			
	5-10	.24	.24			
	10-23	.17	.20			
	23-26	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
578:						
Swedesflat cobbly fine sandy loam------	0-2	.10	.17	1	3	86
	2-8	.05	.10			
	8-12	.15	.17			
	12-18	---	---			
580:						
Surnuf taxadjunct loam-----------------	0-1	---	---	5	5	56
	1-5	.20	.28			
	5-11	.15	.17			
	11-18	.28	.32			
	18-31	.28	.32			
	31-43	.28	.32			
	43-54	.10	.37			
	54-67	.32	.37			
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
Rock outcrop, metavolcanic.						
581:						
Surnuf taxadjunct loam-----------------	0-1	---	---	5	5	56
	1-5	.20	.28			
	5-11	.15	.17			
	11-18	.28	.32			
	18-31	.28	.32			
	31-43	.28	.32			
	43-54	.10	.37			
	54-67	.32	.37			
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
582:						
Surnuf taxadjunct loam-----------------	0-1	---	---	5	5	56
	1-5	.20	.28			
	5-11	.15	.17			
	11-18	.28	.32			
	18-31	.28	.32			
	31-43	.28	.32			
	43-54	.10	.37			
	54-67	.32	.37			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
582:						
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
583:						
Surnuf taxadjunct loam-----------	0-1	---	---	5	5	56
	1-5	.20	.28			
	5-11	.15	.17			
	11-18	.28	.32			
	18-31	.28	.32			
	31-43	.28	.32			
	43-54	.10	.37			
	54-67	.32	.37			
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
584:						
Flanly loam----------	0-2	.20	.24	2	5	56
	2-5	.15	.15			
	5-10	.24	.24			
	10-23	.17	.20			
	23-26	---	---			
Swedesflat cobbly fine sandy loam------	0-2	.10	.17	1	3	86
	2-8	.05	.10			
	8-12	.15	.17			
	12-18	---	---			
Rackerby very gravelly sandy loam------	0-2	.05	.10	1	5	56
	2-5	.05	.15			
	5-13	.10	.20			
	13	---	---			
585:						
Flanly loam----------	0-2	.20	.24	2	5	56
	2-5	.15	.15			
	5-10	.24	.24			
	10-23	.17	.20			
	23-26	---	---			
Sommeyflat loam----------	0-2	.20	.20	5	5	56
	2-9	.20	.20			
	9-14	.32	.32			
	14-24	.32	.32			
	24-31	.32	.32			
	31-62	.37	.37			
	62-70	.37	.37			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
586:						
Sommeyflat loam	0-2	.20	.20	5	5	56
	2-9	.20	.20			
	9-14	.32	.32			
	14-24	.32	.32			
	24-31	.32	.32			
	31-62	.37	.37			
	62-70	.37	.37			
Mounthope loam	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
587:						
Sommeyflat loam	0-2	.20	.20	5	5	56
	2-9	.20	.20			
	9-14	.32	.32			
	14-24	.32	.32			
	24-31	.32	.32			
	31-62	.37	.37			
	62-70	.37	.37			
Mounthope loam	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
Hurleton gravelly sandy loam	0-3	.10	.15	2	4	86
	3-7	.10	.15			
	7-12	.10	.17			
	12-16	.05	.17			
	16-19	.05	.17			
	19-25	.02	.20			
	25	---	---			
588:						
Ultic Haploxeralfs, thermic, high terrace	0-2	.24	.28	3	5	56
	2-6	.15	.32			
	6-12	.10	.32			
	12-20	.10	.32			
	20-32	.05	.28			
	32-39	.05	.32			
	39-50	.02	.17			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
589:						
Ultic Haploxeralfs, thermic, high terrace	0-2	.24	.28	3	5	56
	2-6	.15	.32			
	6-12	.10	.32			
	12-20	.10	.32			
	20-32	.05	.28			
	32-39	.05	.32			
	39-50	.02	.17			
590:						
Vistarobles sandy loam	0-5	.17	.20	1	3	86
	5-10	.15	.17			
	10-14	.10	.15			
	14-34	.02	.02			
	34-40	.10	.20			
Redding loam	0-4	.28	.32	2	6	48
	4-11	.28	.32			
	11-24	.28	.32			
	24-35	.17	.20			
	35-40	.02	.02			
Argonaut taxadjunct loam	0-2	.20	.28	3	5	56
	2-8	.24	.32			
	8-14	.17	.24			
	14-20	.17	.20			
	20-26	.20	.24			
	26-30	.24	.28			
	30	---	---			
Haploxererts gravelly silty clay	0-2	.20	.32	4	4	86
	2-10	.17	.24			
	10-30	.10	.17			
	30-33	.24	.28			
	33-41	.24	.28			
	41-44	---	---			
603:						
Oroville gravelly fine sandy loam	0-2	.24	.37	2	4	86
	2-6	.15	.24			
	6-13	.20	.32			
	13-17	.15	.28			
	17-23	.10	.20			
	23-31	.02	.02			
	31-60	.02	.02			
Thermalito sandy loam	0-2	.17	.20	2	4	86
	2-6	.17	.28			
	6-12	.20	.28			
	12-18	.15	.28			
	18-23	.15	.28			
	23-25	.17	.28			
	25-29	.15	.28			
	29-32	.15	.28			
	32-60	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
603:						
Fernandez sandy loam	0-2	.17	.24	5	3	86
	2-6	.17	.24			
	6-18	.17	.24			
	18-28	.28	.37			
	28-44	.32	.37			
	44-57	.24	.32			
	57-65	.20	.32			
	65-73	.20	.37			
	73-85	.02	.02			
Thompsonflat fine sandy loam	0-3	.20	.28	5	3	86
	3-7	.17	.20			
	7-11	.15	.20			
	11-15	.10	.17			
	15-22	.10	.24			
	22-35	.05	.28			
	35-45	.05	.28			
	45-53	.05	.28			
	53-66	.05	.28			
	66-80	.02	.28			
605:						
Duric Xerarents fine sandy loam, leveled	0-5	.24	.28	1	3	86
	5-12	.05	.24			
	12-18	.02	.02			
Oroville gravelly fine sandy loam	0-2	.24	.37	2	4	86
	2-6	.15	.24			
	6-13	.20	.32			
	13-17	.15	.28			
	17-23	.10	.20			
	23-31	.02	.02			
	31-60	.02	.02			
606:						
Redtough loam	0-1	.24	.28	1	5	56
	1-7	.24	.37			
	7-13	.17	.37			
	13	.02	.02			
Fallager loam	0-1	.20	.24	1	6	48
	1-3	.15	.32			
	3-7	.15	.32			
	7	.02	.02			
Anita, gravelly duripan	0-3	.17	.24	1	4	86
	3-8	.15	.28			
	8-15	.17	.28			
	15	.02	.02			
609:						
Anita, gravelly duripan	0-3	.17	.24	2	8	38
	3-8	.15	.24			
	8-15	.15	.24			
	15	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
609:						
Tuscan taxadjunct gravelly clay loam---	0-2	.20	.28	2	5	56
	2-5	.24	.32			
	5-13	.24	.32			
	13-23	.20	.32			
	23-29	.10	.37			
	29	.02	.02			
614:						
Doemill gravelly loam-----------	0-1	.24	.32	1	6	56
	1-5	.28	.43			
	5-9	.28	.43			
	9-14	.20	.43			
	14	---	---			
Jokerst very cobbly loam----------	0-1	.15	.32	1	7	56
	1-4	.20	.43			
	4	---	---			
615:						
Doemill gravelly loam-----------	0-1	.24	.32	1	6	56
	1-5	.28	.43			
	5-9	.28	.43			
	9-14	.20	.43			
	14	---	---			
Jokerst very cobbly loam----------	0-1	.15	.32	1	7	56
	1-4	.20	.43			
	4	---	---			
616:						
Jokerst very cobbly loam----------	0-1	.15	.32	1	7	56
	1-4	.20	.43			
	4	---	---			
Doemill gravelly loam-----------	0-1	.24	.32	1	6	56
	1-5	.28	.43			
	5-9	.28	.43			
	9-14	.20	.43			
	14	---	---			
Typic Haploxeralfs gravelly loam-------	0-2	.10	.15	3	7	38
	2-8	.20	.32			
	8-16	.10	.28			
	16-27	.10	.28			
	27-40	.05	.28			
	40	---	---			
617:						
Doemill gravelly loam-----------	0-1	.24	.32	1	6	56
	1-5	.28	.43			
	5-9	.28	.43			
	9-14	.20	.43			
	14	---	---			
Jokerst very cobbly loam----------	0-1	.15	.32	1	7	56
	1-4	.20	.43			
	4	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
617:						
Typic Haploxeralfs gravelly loam-------	0-2	.10	.15	3	7	38
	2-8	.20	.32			
	8-16	.10	.28			
	16-27	.10	.28			
	27-40	.05	.28			
	40	---	---			
619:						
Carhart taxadjunct clay----------	0-4	.17	.24	1	7	38
	4-11	.20	.28			
	11-17	.20	.28			
	17	---	---			
620:						
Doemill gravelly loam----------	0-1	.24	.32	1	6	56
	1-5	.28	.43			
	5-9	.28	.43			
	9-14	.20	.43			
	14	---	---			
Jokerst very cobbly loam----------	0-1	.15	.32	1	7	56
	1-4	.20	.43			
	4	---	---			
Ultic Haploxeralfs, thermic, gravelly loam----------	0-2	.15	.24	2	7	38
	2-6	.15	.32			
	6-13	.10	.32			
	13-21	.10	.37			
	21-31	.10	.37			
	31	---	---			
621:						
Doemill gravelly loam----------	0-1	.24	.32	1	6	56
	1-5	.28	.43			
	5-9	.28	.43			
	9-14	.20	.43			
	14	---	---			
Jokerst very cobbly loam----------	0-1	.15	.32	1	7	56
	1-4	.20	.43			
	4	---	---			
Ultic Haploxeralfs, thermic, gravelly loam----------	0-2	.15	.24	2	7	38
	2-6	.15	.32			
	6-13	.10	.32			
	13-21	.10	.37			
	21-31	.10	.37			
	31	---	---			
622:						
Xerorthents, shallow----------	0-2	.10	.15	1	7	38
	2-5	.15	.28			
	5-8	.10	.32			
	8	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
622:						
Typic Haploxeralfs gravelly loam-------	0-2	.10	.15	3	7	38
	2-8	.20	.32			
	8-16	.10	.28			
	16-27	.10	.28			
	27-40	.05	.28			
	40	---	---			
Rock outcrop, mudflow-breccia cliffs.						
623:						
Xerorthents, shallow-------------------	0-2	.10	.15	1	7	38
	2-5	.15	.28			
	5-8	.10	.32			
	8	---	---			
Typic Haploxeralfs gravelly loam-------	0-2	.10	.15	3	7	38
	2-8	.20	.32			
	8-16	.10	.28			
	16-27	.10	.28			
	27-40	.05	.28			
	40	---	---			
Rock outcrop, mudflow-breccia cliffs.						
624:						
Ultic Haploxeralfs, mesic, gravelly loam----------	0-1	---	---	2	7	38
	1-4	.10	.20			
	4-9	.10	.24			
	9-23	.10	.32			
	23-32	.10	.32			
	32-42	.05	.32			
	42	---	---			
Rockstripe very gravelly loam----------	0-2	.10	.24	1	7	48
	2-6	.10	.32			
	6-9	.17	.37			
	9	---	---			
625:						
Ultic Haploxeralfs, mesic, gravelly loam----------	0-1	---	---	2	7	38
	1-4	.10	.20			
	4-9	.10	.24			
	9-23	.10	.32			
	23-32	.10	.32			
	32-42	.05	.32			
	42	---	---			
Rockstripe very gravelly loam----------	0-2	.10	.24	1	7	48
	2-6	.10	.32			
	6-9	.17	.37			
	9	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
626:						
Ultic Haploxeralfs gravelly loam-------	0-4	.15	.24	2	7	38
	4-10	.20	.28			
	10-18	.24	.32			
	18-35	.20	.28			
	35-48	.20	.32			
	48	---	---			
Rockstripe very gravelly loam----------	0-2	.10	.24	1	7	48
	2-6	.10	.32			
	6-9	.17	.37			
	9	---	---			
Rock outcrop, mudflow-breccia cliffs.						
627:						
Ultic Haploxeralfs gravelly loam-------	0-4	.15	.24	2	7	38
	4-10	.20	.28			
	10-18	.24	.32			
	18-35	.20	.28			
	35-48	.20	.32			
	48	---	---			
Rockstripe very gravelly loam----------	0-2	.10	.24	1	7	48
	2-6	.10	.32			
	6-9	.17	.37			
	9	---	---			
Rock outcrop, mudflow-breccia cliffs.						
628:						
Rockstripe very gravelly loam----------	0-2	.10	.24	1	7	48
	2-6	.10	.32			
	6-9	.17	.37			
	9	---	---			
Ultic Haploxeralfs gravelly loam-------	0-4	.15	.24	2	7	38
	4-10	.20	.28			
	10-18	.24	.32			
	18-35	.20	.28			
	35-48	.20	.32			
	48	---	---			
Rock outcrop, mudflow-breccia cliffs.						
629:						
Slideland gravelly loam----------	0-2	.17	.24	5	7	48
	2-9	.17	.24			
	9-14	.24	.32			
	14-21	.24	.37			
	21-28	.24	.32			
	28-38	.24	.37			
	38-51	.24	.37			
	51-69	.17	.37			
	69-80	.15	.37			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
630:						
Slideland gravelly loam----------	0-2	.17	.24	5	7	48
	2-9	.17	.24			
	9-14	.24	.32			
	14-21	.24	.37			
	21-28	.24	.32			
	28-38	.24	.37			
	38-51	.24	.37			
	51-69	.17	.37			
	69-80	.15	.37			
631:						
Slideland gravelly loam----------	0-2	.17	.24	5	7	48
	2-9	.17	.24			
	9-14	.24	.32			
	14-21	.24	.37			
	21-28	.24	.32			
	28-38	.24	.37			
	38-51	.24	.37			
	51-69	.17	.37			
	69-80	.15	.37			
632:						
Ultic Haploxeralfs, conglomerate, very deep----------	0-2	---	---	2	7	38
	2-6	.10	.20			
	6-10	.15	.24			
	10-17	.20	.28			
	17-28	.15	.28			
	28-40	.10	.32			
	40-50	.10	.32			
	50-71	.05	.20			
	71-84	.05	.24			
Ultic Haploxeralfs, conglomerate, moderately deep----------	0-2	---	---	2	8	0
	2-5	.05	.20			
	5-10	.05	.24			
	10-25	.05	.24			
	25	---	---			
633:						
Ultic Haploxeralfs, conglomerate, very deep----------	0-2	---	---	2	7	38
	2-6	.10	.20			
	6-10	.15	.24			
	10-17	.20	.28			
	17-28	.15	.28			
	28-40	.10	.32			
	40-50	.10	.32			
	50-71	.05	.20			
	71-84	.05	.24			
Ultic Haploxeralfs, conglomerate, moderately deep----------	0-2	---	---	2	8	0
	2-5	.05	.20			
	5-10	.05	.24			
	10-25	.05	.24			
	25	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
634:						
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	2	7	38
	2-6	.10	.20			
	6-10	.15	.24			
	10-17	.20	.28			
	17-28	.15	.28			
	28-40	.10	.32			
	40-50	.10	.32			
	50-71	.05	.20			
	71-84	.05	.24			
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	---	---	2	8	0
	2-5	.05	.20			
	5-10	.05	.24			
	10-25	.05	.24			
	25	---	---			
635:						
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	2	7	38
	2-6	.10	.20			
	6-10	.15	.24			
	10-17	.20	.28			
	17-28	.15	.28			
	28-40	.10	.32			
	40-50	.10	.32			
	50-71	.05	.20			
	71-84	.05	.24			
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	---	---	2	8	0
	2-5	.05	.20			
	5-10	.05	.24			
	10-25	.05	.24			
	25	---	---			
636:						
Ultic Haploxeralfs, conglomerate, moderately deep	0-2	---	---	2	8	0
	2-5	.05	.20			
	5-10	.05	.24			
	10-25	.05	.24			
	25	---	---			
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	2	7	38
	2-6	.10	.20			
	6-10	.15	.24			
	10-17	.20	.28			
	17-28	.15	.28			
	28-40	.10	.32			
	40-50	.10	.32			
	50-71	.05	.20			
	71-84	.05	.24			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
637:						
Ultic Haploxeralfs, sandstone----------	0-0.5	---	---	4	3	86
	0.5-2	.17	.20			
	2-6	.28	.28			
	6-11	.28	.28			
	11-17	.24	.28			
	17-24	.24	.32			
	24-32	.10	.32			
	32-53	.02	.24			
	53-65	---	---			
	65	---	---			
638:						
Ultic Haploxeralfs, sandstone----------	0-0.5	---	---	4	3	86
	0.5-2	.17	.20			
	2-6	.28	.28			
	6-11	.28	.28			
	11-17	.24	.28			
	17-24	.24	.32			
	24-32	.10	.32			
	32-53	.02	.24			
	53-65	---	---			
	65	---	---			
639:						
Ultic Haploxeralfs, sandstone----------	0-0.5	---	---	4	3	86
	0.5-2	.17	.20			
	2-6	.28	.28			
	6-11	.28	.28			
	11-17	.24	.28			
	17-24	.24	.32			
	24-32	.10	.32			
	32-53	.02	.24			
	53-65	---	---			
	65	---	---			
640:						
Ultic Haploxeralfs, sandstone----------	0-0.5	---	---	4	3	86
	0.5-2	.17	.20			
	2-6	.28	.28			
	6-11	.28	.28			
	11-17	.24	.28			
	17-24	.24	.32			
	24-32	.10	.32			
	32-53	.02	.24			
	53-65	---	---			
	65	---	---			
641:						
Ultic Haploxeralfs, sandstone----------	0-0.5	---	---	4	3	86
	0.5-2	.17	.20			
	2-6	.28	.28			
	6-11	.28	.28			
	11-17	.24	.28			
	17-24	.24	.32			
	24-32	.10	.32			
	32-53	.02	.24			
	53-65	---	---			
	65	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
642:						
Chinacamp gravelly loam	0-1	---	---	5	7	48
	1-5	.10	.20			
	5-15	.10	.20			
	15-29	.10	.28			
	29-38	.15	.28			
	38-44	.15	.32			
	44-61	.20	.37			
	61-72	.15	.37			
643:						
Chinacamp gravelly loam	0-1	---	---	5	7	48
	1-5	.10	.20			
	5-15	.10	.20			
	15-29	.10	.28			
	29-38	.15	.28			
	38-44	.15	.32			
	44-61	.20	.37			
	61-72	.15	.37			
644:						
Chinacamp gravelly loam	0-1	---	---	5	7	48
	1-5	.10	.20			
	5-15	.10	.20			
	15-29	.10	.28			
	29-38	.15	.28			
	38-44	.15	.32			
	44-61	.20	.37			
	61-72	.15	.37			
645:						
Chinacamp gravelly loam	0-1	---	---	5	7	48
	1-5	.10	.20			
	5-15	.10	.20			
	15-29	.10	.28			
	29-38	.15	.28			
	38-44	.15	.32			
	44-61	.20	.37			
	61-72	.15	.37			
646:						
Coalcanyon taxadjunct very gravelly loam	0-2	.10	.28	5	8	48
	2-6	.15	.32			
	6-14	.15	.32			
	14-24	.15	.37			
	24-42	.05	.32			
	42-54	.10	.28			
	54-72	.05	.32			
647:						
Coalcanyon taxadjunct very gravelly loam	0-2	.10	.28	5	8	48
	2-6	.15	.32			
	6-14	.15	.32			
	14-24	.15	.37			
	24-42	.05	.32			
	42-54	.10	.28			
	54-72	.05	.32			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
648:						
Coalcanyon taxadjunct very gravelly loam	0-2	.10	.28	5	8	48
	2-6	.15	.32			
	6-14	.15	.32			
	14-24	.15	.37			
	24-42	.05	.32			
	42-54	.10	.28			
	54-72	.05	.32			
649:						
Coalcanyon taxadjunct very gravelly loam	0-2	.10	.28	5	8	48
	2-6	.15	.32			
	6-14	.15	.32			
	14-24	.15	.37			
	24-42	.05	.32			
	42-54	.10	.28			
	54-72	.05	.32			
650:						
Schott very gravelly loam	0-2	---	---	3	8	48
	2-6	.10	.24			
	6-13	.10	.24			
	13-22	.05	.28			
	22-40	.05	.32			
	40-50	.02	.20			
	50	---	---			
651:						
Schott very gravelly loam	0-2	---	---	3	8	48
	2-6	.10	.24			
	6-13	.10	.24			
	13-22	.05	.28			
	22-40	.05	.32			
	40-50	.02	.20			
	50	---	---			
652:						
Schott very gravelly loam	0-2	---	---	3	8	48
	2-6	.10	.24			
	6-13	.10	.24			
	13-22	.05	.28			
	22-40	.05	.32			
	40-50	.02	.20			
	50	---	---			
Rock outcrop, mudflow breccia.						
654:						
Coridge bouldery loam	0-1	.20	.28	2	7	48
	1-6	.15	.32			
	6-12	.20	.37			
	12-19	.15	.37			
	19-24	.10	.32			
	24	---	---			
Rock outcrop, Cohasset basalt.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
655:						
Coridge bouldery loam	0-1	.20	.28	2	7	48
	1-6	.15	.32			
	6-12	.20	.37			
	12-19	.15	.37			
	19-24	.10	.32			
	24	---	---			
Rock outcrop, Cohasset basalt.						
656:						
Rock outcrop, basalt cliffs.						
Coalcanyon taxadjunct very gravelly loam	0-2	.10	.28	5	8	48
	2-6	.15	.32			
	6-14	.15	.32			
	14-24	.15	.37			
	24-42	.05	.32			
	42-54	.10	.28			
	54-72	.05	.32			
657:						
Bonneyridge sandy loam	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Chawanakee gravelly sandy loam	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
Rock outcrop, quartz diorite.						
658:						
Bonneyridge sandy loam	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Chawanakee gravelly sandy loam	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
Rock outcrop, quartz diorite.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
659:						
Bonneyridge sandy loam----------	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Chawanakee gravelly sandy loam---------	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
Rock outcrop, quartz diorite.						
660:						
Bonneyridge sandy loam----------	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Chawanakee gravelly sandy loam---------	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
Rock outcrop, quartz diorite.						
661:						
Millerridge gravelly sandy clay loam---	0-2	.10	.15	3	6	56
	2-6	.05	.10			
	6-12	.17	.28			
	12-20	.17	.32			
	20-26	.20	.32			
	26	---	---			
Boxrobber cobbly sandy clay loam-------	0-2	.05	.10	2	6	56
	2-8	.05	.10			
	8-16	.05	.28			
	16-30	---	---			
	30	---	---			
662:						
Millerridge gravelly sandy clay loam---	0-2	.10	.15	3	6	56
	2-6	.05	.10			
	6-12	.17	.28			
	12-20	.17	.32			
	20-26	.20	.32			
	26	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
662:						
Boxrobber cobbly sandy clay loam-------	0-2	.05	.10	2	6	56
	2-8	.05	.10			
	8-16	.05	.28			
	16-30	---	---			
	30	---	---			
663:						
Millerridge gravelly sandy clay loam---	0-2	.10	.15	3	6	56
	2-6	.05	.10			
	6-12	.17	.28			
	12-20	.17	.32			
	20-26	.20	.32			
	26	---	---			
Boxrobber cobbly sandy clay loam-------	0-2	.05	.10	2	6	56
	2-8	.05	.10			
	8-16	.05	.28			
	16-30	---	---			
	30	---	---			
664:						
Millerridge gravelly sandy clay loam---	0-2	.10	.15	3	6	56
	2-6	.05	.10			
	6-12	.17	.28			
	12-20	.17	.32			
	20-26	.20	.32			
	26	---	---			
Boxrobber cobbly sandy clay loam-------	0-2	.05	.10	2	6	56
	2-8	.05	.10			
	8-16	.05	.28			
	16-30	---	---			
	30	---	---			
665:						
Surnuf gravelly loam-------------------	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Bigridge loam--------------------------	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
666:						
Surnuf gravelly loam----------	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Bigridge loam----------	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
667:						
Surnuf gravelly loam----------	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Bigridge loam----------	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
668:						
Surnuf gravelly loam----------	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Bigridge loam----------	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
669:						
Oroshore gravelly loam	0-2	.17	.28	3	7	48
	2-15	.15	.32			
	15-28	.10	.32			
	28-34	.05	.32			
	34	---	---			
Mounthope loam	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
Dunstone gravelly loam	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			
670:						
Oroshore gravelly loam	0-2	.17	.28	3	7	48
	2-15	.15	.32			
	15-28	.10	.32			
	28-34	.05	.32			
	34	---	---			
Mounthope loam	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
Dunstone gravelly loam	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			
671:						
Oroshore gravelly loam	0-2	.17	.28	3	7	48
	2-15	.15	.32			
	15-28	.10	.32			
	28-34	.05	.32			
	34	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
671:						
Mounthope loam	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
Dunstone gravelly loam	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			
672:						
Oroshore gravelly loam	0-2	.17	.28	3	7	48
	2-15	.15	.32			
	15-28	.10	.32			
	28-34	.05	.32			
	34	---	---			
Mounthope loam	0-1	---	---	3	5	56
	1-3	.24	.28			
	3-7	.28	.37			
	7-15	.37	.43			
	15-22	.17	.32			
	22-26	.15	.32			
	26-31	.10	.32			
	31-42	.10	.32			
	42-52	.15	.32			
	52	---	---			
Dunstone gravelly loam	0-4	.17	.28	2	5	56
	4-6	.24	.37			
	6-10	.17	.37			
	10-15	.17	.37			
	15-37	---	---			
	37	---	---			
674:						
Chawanakee gravelly sandy loam	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
Bonneyridge sandy loam	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Rock outcrop, quartz diorite.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
675:						
Clearhayes sandy clay loam	0-2	.17	.20	4	5	56
	2-10	.10	.17			
	10-19	.10	.17			
	19-28	.05	.24			
	28-38	.05	.32			
	38-46	.02	.24			
	46	---	---			
Hamslough clay	0-3	.17	.20	2	4	86
	3-14	.15	.24			
	14-19	.05	.28			
	19-27	.02	.15			
	27	.02	.02			
676:						
Carhart clay	0-2	.24	.24	3	7	38
	2-12	.28	.28			
	12-24	.28	.28			
	24-30	.32	.32			
	30	---	---			
Anita taxadjunct clay	0-2	.24	.24	2	7	38
	2-6	.24	.24			
	6-11	.24	.24			
	11	---	---			
677:						
Tuscan gravelly loam	0-2	.17	.28	2	7	48
	2-4	.24	.32			
	4-7	.24	.37			
	7-11	.15	.32			
	11	.02	.02			
Fallager loam	0-1	.20	.24	1	6	48
	1-3	.15	.32			
	3-7	.15	.32			
	7	.02	.02			
Anita, gravelly duripan	0-3	.17	.24	2	8	38
	3-8	.15	.24			
	8-15	.15	.24			
	15	.02	.02			
679:						
Lucksev loam	0-2	.24	.28	1	6	48
	2-7	.24	.32			
	7-15	.32	.37			
	15	---	---			
Butteside gravelly loam	0-2	.15	.24	3	7	48
	2-8	.20	.28			
	8-13	.28	.32			
	13-27	.28	.32			
	27	---	---			
Carhart clay	0-2	.24	.24	3	7	38
	2-12	.28	.28			
	12-24	.28	.28			
	24-30	.32	.32			
	30	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
680:						
Lucksev loam	0-2	.24	.28	1	6	48
	2-7	.24	.32			
	7-15	.32	.37			
	15	---	---			
Butteside gravelly loam	0-2	.15	.24	3	7	48
	2-8	.20	.28			
	8-13	.28	.32			
	13-27	.28	.32			
	27	---	---			
683:						
Typic Haploxeralfs, magnesic, low elevation	0-3	.10	.24	2	8	0
	3-10	.10	.28			
	10-21	.10	.28			
	21-30	.05	.32			
	30	---	---			
Earlal very gravelly loam	0-3	.10	.17	1	7	48
	3-7	.05	.17			
	7-14	.05	.32			
	14	---	---			
Rock outcrop, serpentinite.						
684:						
Typic Haploxeralfs, magnesic, low elevation	0-3	.10	.24	2	8	0
	3-10	.10	.28			
	10-21	.10	.28			
	21-30	.05	.32			
	30	---	---			
Earlal very gravelly loam	0-3	.10	.17	1	7	48
	3-7	.05	.17			
	7-14	.05	.32			
	14	---	---			
Rock outcrop, serpentinite.						
685:						
Bosquejo taxadjunct, gravelly substratum	0-3	.20	.20	2	7	38
	3-8	.15	.15			
	8-17	.15	.15			
	17-27	.15	.15			
	27-33	.20	.28			
	33-41	.05	.20			
	41-55	.05	.20			
	55-70	.24	.24			
	70-81	.20	.20			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
686:						
Redsluff taxadjunct clay loam----------	0-4	.24	.28	4	6	48
	4-10	.15	.15			
	10-21	.20	.28			
	21-32	.20	.20			
	32-42	.20	.20			
	42-53	.24	.37			
	53-68	.05	.24			
	68-75	.10	.24			
	75-80	---	---			
687:						
Xerorthents, shallow--------------------	0-2	.10	.15	1	7	38
	2-5	.15	.28			
	5-8	.10	.32			
	8	---	---			
Typic Haploxeralfs gravelly loam-------	0-2	.10	.15	3	7	38
	2-8	.20	.32			
	8-16	.10	.28			
	16-27	.10	.28			
	27-40	.05	.28			
	40	---	---			
700:						
Retsongulch very gravelly sandy loam---	0-1	---	---	2	4	86
	1-3	.05	.10			
	3-12	.10	.17			
	12-21	.05	.32			
	21-30	.05	.32			
	30	---	---			
Flumewall gravelly sandy loam----------	0-0.5	---	---	1	4	86
	0.5-2	.05	.10			
	2-7	.05	.15			
	7-18	.02	.17			
	18	---	---			
701:						
Powellton gravelly loam-----------------	0-0.5	---	---	5	7	48
	0.5-2	---	---			
	2-4	.15	.28			
	4-9	.15	.28			
	9-15	.24	.32			
	15-24	.28	.32			
	24-30	.32	.32			
	30-41	.55	.55			
	41-61	.55	.55			
	61-83	.55	.55			
Obstruction gravelly sandy loam--------	0-4	---	---	5	4	86
	4-7	.05	.10			
	7-10	.05	.10			
	10-18	.10	.17			
	18-25	.15	.20			
	25-33	.15	.20			
	33-44	.17	.24			
	44-64	.20	.32			
	64-84	.28	.43			
	84	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
702:						
Cerpone gravelly loam----------	0-1	---	---	3	6	56
	1-2	---	---			
	2-4	.17	.28			
	4-9	.15	.32			
	9-17	.17	.37			
	17-26	.24	.37			
	26-41	.15	.43			
	41-57	.15	.49			
	57	---	---			
Typic Haploxeralfs, magnesic, very gravelly loam----------	0-3	.10	.24	3	8	48
	3-7	.15	.28			
	7-12	.10	.28			
	12-18	.15	.28			
	18-24	.15	.32			
	24-32	.05	.32			
	32-42	.05	.32			
	42-54	.05	.37			
	54	---	---			
Earlal very gravelly loam----------	0-3	.10	.17	1	7	48
	3-7	.05	.17			
	7-14	.05	.32			
	14	---	---			
703:						
Cerpone gravelly loam----------	0-1	---	---	3	6	56
	1-2	---	---			
	2-4	.17	.28			
	4-9	.15	.32			
	9-17	.17	.37			
	17-26	.24	.37			
	26-41	.15	.43			
	41-57	.15	.49			
	57	---	---			
Typic Haploxeralfs, magnesic, very gravelly loam----------	0-3	.10	.24	3	8	48
	3-7	.15	.28			
	7-12	.10	.28			
	12-18	.15	.28			
	18-24	.15	.32			
	24-32	.05	.32			
	32-42	.05	.32			
	42-54	.05	.37			
	54	---	---			
Earlal very gravelly loam----------	0-3	.10	.17	1	7	48
	3-7	.05	.17			
	7-14	.05	.32			
	14	---	---			
Rock outcrop, serpentinite.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
704:						
Typic Haploxeralfs, magnesic, very gravelly loam	0-3	.10	.24	3	8	48
	3-7	.15	.28			
	7-12	.10	.28			
	12-18	.15	.28			
	18-24	.15	.32			
	24-32	.05	.32			
	32-42	.05	.32			
	42-54	.05	.37			
	54	---	---			
Earlal very gravelly loam	0-3	.10	.17	1	7	48
	3-7	.05	.17			
	7-14	.05	.32			
	14	---	---			
Cerpone gravelly loam	0-1	---	---	3	6	56
	1-2	---	---			
	2-4	.17	.28			
	4-9	.15	.32			
	9-17	.17	.37			
	17-26	.24	.37			
	26-41	.15	.43			
	41-57	.15	.49			
	57	---	---			
Rock outcrop, serpentinite.						
705:						
Typic Haploxeralfs, magnesic, very gravelly loam	0-3	.10	.24	3	8	48
	3-7	.15	.28			
	7-12	.10	.28			
	12-18	.15	.28			
	18-24	.15	.32			
	24-32	.05	.32			
	32-42	.05	.32			
	42-54	.05	.37			
	54	---	---			
Earlal very gravelly loam	0-3	.10	.17	1	7	48
	3-7	.05	.17			
	7-14	.05	.32			
	14	---	---			
Cerpone gravelly loam	0-1	---	---	3	6	56
	1-2	---	---			
	2-4	.17	.28			
	4-9	.15	.32			
	9-17	.17	.37			
	17-26	.24	.37			
	26-41	.15	.43			
	41-57	.15	.49			
	57	---	---			
Rock outcrop, serpentinite.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
711:						
Dixmine very gravelly loam----------	0-1	---	---	4	8	48
	1-2	---	---			
	2-6	.10	.28			
	6-11	.10	.28			
	11-17	.15	.32			
	17-30	.15	.37			
	30-41	.10	.37			
	41-54	.10	.43			
	54	---	---			
Toadtown loam----------	0-2	---	---	5	6	48
	2-3	---	---			
	3-5	.24	.28			
	5-8	.15	.24			
	8-13	.24	.28			
	13-18	.24	.28			
	18-27	.32	.32			
	27-51	.49	.49			
	51-65	.49	.49			
	65-75	.49	.49			
	75-79	.55	.55			
712:						
Dixmine very gravelly loam----------	0-1	---	---	4	8	48
	1-2	---	---			
	2-6	.10	.28			
	6-11	.10	.28			
	11-17	.15	.32			
	17-30	.15	.37			
	30-41	.10	.37			
	41-54	.10	.43			
	54	---	---			
Toadtown loam----------	0-2	---	---	5	6	48
	2-3	---	---			
	3-5	.24	.28			
	5-8	.15	.24			
	8-13	.24	.28			
	13-18	.24	.28			
	18-27	.32	.32			
	27-51	.49	.49			
	51-65	.49	.49			
	65-75	.49	.49			
	75-79	.55	.55			
713:						
Dixmine very gravelly loam----------	0-1	---	---	4	8	48
	1-2	---	---			
	2-6	.10	.28			
	6-11	.10	.28			
	11-17	.15	.32			
	17-30	.15	.37			
	30-41	.10	.37			
	41-54	.10	.43			
	54	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
713:						
Toadtown loam	0-2	---	---	5	6	48
	2-3	---	---			
	3-5	.24	.28			
	5-8	.15	.24			
	8-13	.24	.28			
	13-18	.24	.28			
	18-27	.32	.32			
	27-51	.49	.49			
	51-65	.49	.49			
	65-75	.49	.49			
	75-79	.55	.55			
714:						
Dixmine very gravelly loam	0-1	---	---	4	8	48
	1-2	---	---			
	2-6	.10	.28			
	6-11	.10	.28			
	11-17	.15	.32			
	17-30	.15	.37			
	30-41	.10	.37			
	41-54	.10	.43			
	54	---	---			
Toadtown loam	0-2	---	---	5	6	48
	2-3	---	---			
	3-5	.24	.28			
	5-8	.15	.24			
	8-13	.24	.28			
	13-18	.24	.28			
	18-27	.32	.32			
	27-51	.49	.49			
	51-65	.49	.49			
	65-75	.49	.49			
	75-79	.55	.55			
715:						
Logtrain gravelly loam	0-1	---	---	3	6	56
	1-3	.15	.28			
	3-9	.10	.24			
	9-21	.15	.32			
	21-38	.15	.37			
	38-54	.05	.43			
	54	---	---			
Bottlehill very gravelly loam	0-0.5	---	---	2	7	56
	0.5-2	---	---			
	2-4	.10	.28			
	4-9	.10	.24			
	9-13	.10	.24			
	13-22	.05	.32			
	22-33	.05	.32			
	33	---	---			
Walkermine very gravelly loam	0-1	---	---	1	8	0
	1-3	.05	.24			
	3-12	.05	.28			
	12	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
716:						
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
Surnuf gravelly loam--------------------	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
717:						
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
Surnuf gravelly loam--------------------	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
718:						
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
Surnuf gravelly loam--------------------	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Spine taxadjunct very cobbly loam------	0-2	.10	.24	1	8	48
	2-15	.05	.24			
	15	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
719:						
Griffgulch very gravelly silt loam-----	0-2	---	---	3	8	48
	2-3	---	---			
	3-7	.10	.28			
	7-11	.10	.28			
	11-20	.05	.28			
	20-33	.10	.32			
	33-47	.10	.32			
	47-58	.05	.32			
	58	---	---			
Surnuf gravelly loam--------------------	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Spine taxadjunct very cobbly loam------	0-2	.10	.24	1	8	48
	2-15	.05	.24			
	15	---	---			
720:						
Dystroxerepts extremely gravelly loam--	0-1	---	---	2	8	0
	1-4	.05	.28			
	4-12	.10	.37			
	12-22	.10	.37			
	22-28	.05	.43			
	28-38	.02	.28			
	38	---	---			
Haploxeralfs very gravelly loam--------	0-0.5	---	---	3	8	48
	0.5-4	.15	.20			
	4-9	.10	.37			
	9-13	.10	.37			
	13-22	.05	.37			
	22-31	.05	.37			
	31-47	.02	.37			
	47	---	---			
Rock outcrop, metavolcanic.						
721:						
Haploxerands, granitic till, medial sandy loam----------	0-2	---	---	2	3	86
	2-5	.32	.37			
	5-12	.28	.37			
	12-22	.24	.37			
	22-41	.28	.55			
	41-55	.10	.55			
	55-74	.10	.64			
	74-87	.10	.64			
722:						
Haploxerands, granitic till, medial sandy loam----------	0-2	---	---	2	3	86
	2-5	.32	.37			
	5-12	.28	.37			
	12-22	.24	.37			
	22-41	.28	.55			
	41-55	.10	.55			
	55-74	.10	.64			
	74-87	.10	.64			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
723:						
Haploxerands, granitic till, medial						
sandy loam----------	0-2	---	---	2	3	86
	2-5	.32	.37			
	5-12	.28	.37			
	12-22	.24	.37			
	22-41	.28	.55			
	41-55	.10	.55			
	55-74	.10	.64			
	74-87	.10	.64			
724:						
Haploxerands, volcanic till, cobbly						
medial sandy loam----------	0-2	---	---	2	4	86
	2-4	.10	.15			
	4-17	.10	.15			
	17-37	.10	.20			
	37-41	.10	.20			
	41-52	.05	.10			
	52-80	.05	.10			
725:						
Haploxerands, volcanic till, cobbly						
medial sandy loam----------	0-2	---	---	2	4	86
	2-4	.10	.15			
	4-17	.10	.15			
	17-37	.10	.20			
	37-41	.10	.20			
	41-52	.05	.10			
	52-80	.05	.10			
726:						
Haploxerands, volcanic till, cobbly						
medial sandy loam----------	0-2	---	---	2	4	86
	2-4	.10	.15			
	4-17	.10	.15			
	17-37	.10	.20			
	37-41	.10	.20			
	41-52	.05	.10			
	52-80	.05	.10			
727:						
Bonneyridge sandy loam----------	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
728:						
Bonneyridge sandy loam----------	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
729:						
Bonneyridge sandy loam	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
730:						
Tusccoll gravelly loam	0-1	---	---	5	7	48
	1-2	---	---			
	2-6	.17	.24			
	6-14	.15	.24			
	14-23	.17	.28			
	23-33	.24	.32			
	33-41	.24	.37			
	41-49	.24	.32			
	49-70	.20	.37			
Schott very gravelly loam	0-2	---	---	3	8	48
	2-6	.10	.24			
	6-13	.10	.24			
	13-22	.05	.28			
	22-40	.05	.32			
	40-50	.02	.20			
	50	---	---			
731:						
Tusccoll gravelly loam	0-1	---	---	5	7	48
	1-2	---	---			
	2-6	.17	.24			
	6-14	.15	.24			
	14-23	.17	.28			
	23-33	.24	.32			
	33-41	.24	.37			
	41-49	.24	.32			
	49-70	.20	.37			
Schott very gravelly loam	0-2	---	---	3	8	48
	2-6	.10	.24			
	6-13	.10	.24			
	13-22	.05	.28			
	22-40	.05	.32			
	40-50	.02	.20			
	50	---	---			
732:						
Bonepile taxadjunct, duripan substratum	0-1	---	---	4	4	86
	1-4	.05	.10			
	4-7	.05	.10			
	7-15	.02	.10			
	15-30	.02	.05			
	30-37	.05	.24			
	37-47	.05	.43			
	47	.02	.02			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
733:						
Haploxeralfs, terrace, gravelly loam---	0-5	.15	.32	1	7	48
	5-11	.15	.37			
	11-18	.15	.37			
	18-32	.10	.37			
	32-48	.02	.37			
	48-63	.02	.24			
734:						
Haploxerands medial sandy loam---------	0-0.5	---	---	5	3	86
	0.5-2	.24	.28			
	2-5	.20	.28			
	5-12	.32	.43			
	12-23	.32	.49			
	23-30	.32	.49			
	30-42	.37	.55			
	42-60	.37	.55			
	60-80	.43	.55			
Aquic Xerofluvents peaty very fine sandy loam----------	0-3	.24	.24	5	2	134
	3-7	.24	.24			
	7-16	.32	.64			
	16-19	.24	.24			
	19-23	.43	.64			
	23-35	.24	.24			
	35-49	.24	.64			
	49-63	.24	.24			
	63-71	.43	.64			
	71-80	.24	.24			
735:						
Fluvaquents, loamy----------	0-0.5	---	---	5	6	48
	0.5-2	.24	.24			
	2-9	.37	.37			
	9-18	.24	.24			
	18-24	.49	.49			
	24-27	.32	.32			
	27-37	.49	.49			
	37-45	.32	.32			
	45-65	.17	.17			
	65-70	.20	.20			
	70-85	.20	.20			
801:						
Obstruction gravelly sandy loam--------	0-4	---	---	5	4	86
	4-7	.05	.10			
	7-10	.05	.10			
	10-18	.10	.17			
	18-25	.15	.20			
	25-33	.15	.20			
	33-44	.17	.24			
	44-64	.20	.32			
	64-84	.28	.43			
	84	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
802:						
Obskel very gravelly sandy loam--------	0-0.5	---	---	4	4L	86
	0.5-1	---	---			
	1-4	.05	.10			
	4-9	.05	.15			
	9-19	.10	.20			
	19-30	.17	.43			
	30-56	.20	.49			
	56	---	---			
Obstruction gravelly sandy loam--------	0-4	---	---	5	4	86
	4-7	.05	.10			
	7-10	.05	.10			
	10-18	.10	.17			
	18-25	.15	.20			
	25-33	.15	.20			
	33-44	.17	.24			
	44-64	.20	.32			
	64-84	.28	.43			
	84	---	---			
803:						
Obskel very gravelly sandy loam--------	0-0.5	---	---	4	4L	86
	0.5-1	---	---			
	1-4	.05	.10			
	4-9	.05	.15			
	9-19	.10	.20			
	19-30	.17	.43			
	30-56	.20	.49			
	56	---	---			
Obstruction gravelly sandy loam--------	0-4	---	---	5	4	86
	4-7	.05	.10			
	7-10	.05	.10			
	10-18	.10	.17			
	18-25	.15	.20			
	25-33	.15	.20			
	33-44	.17	.24			
	44-64	.20	.32			
	64-84	.28	.43			
	84	---	---			
804:						
Obskel very gravelly sandy loam--------	0-0.5	---	---	4	4L	86
	0.5-1	---	---			
	1-4	.05	.10			
	4-9	.05	.15			
	9-19	.10	.20			
	19-30	.17	.43			
	30-56	.20	.49			
	56	---	---			
Obstruction gravelly sandy loam--------	0-4	---	---	5	4	86
	4-7	.05	.10			
	7-10	.05	.10			
	10-18	.10	.17			
	18-25	.15	.20			
	25-33	.15	.20			
	33-44	.17	.24			
	44-64	.20	.32			
	64-84	.28	.43			
	84	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
804:						
Retsongulch very gravelly sandy loam---	0-1	---	---	2	4	86
	1-3	.05	.10			
	3-12	.10	.17			
	12-21	.05	.32			
	21-30	.05	.32			
	30	---	---			
805:						
Bottlehill very gravelly loam----------	0-0.5	---	---	2	7	56
	0.5-2	---	---			
	2-4	.10	.28			
	4-9	.10	.24			
	9-13	.10	.24			
	13-22	.05	.32			
	22-33	.05	.32			
	33	---	---			
Walkermine very gravelly loam----------	0-1	---	---	1	8	0
	1-3	.05	.24			
	3-12	.05	.28			
	12	---	---			
Logtrain gravelly loam-----------------	0-1	---	---	3	6	56
	1-3	.15	.28			
	3-9	.10	.24			
	9-21	.15	.32			
	21-38	.15	.37			
	38-54	.05	.43			
	54	---	---			
806:						
Bottlehill very gravelly loam----------	0-0.5	---	---	2	7	56
	0.5-2	---	---			
	2-4	.10	.28			
	4-9	.10	.24			
	9-13	.10	.24			
	13-22	.05	.32			
	22-33	.05	.32			
	33	---	---			
Walkermine very gravelly loam----------	0-1	---	---	1	8	0
	1-3	.05	.24			
	3-12	.05	.28			
	12	---	---			
Logtrain gravelly loam-----------------	0-1	---	---	3	6	56
	1-3	.15	.28			
	3-9	.10	.24			
	9-21	.15	.32			
	21-38	.15	.37			
	38-54	.05	.43			
	54	---	---			
807:						
Bottlehill very gravelly loam----------	0-0.5	---	---	2	7	56
	0.5-2	---	---			
	2-4	.10	.28			
	4-9	.10	.24			
	9-13	.10	.24			
	13-22	.05	.32			
	22-33	.05	.32			
	33	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
807:						
Logtrain gravelly loam----------	0-1	---	---	3	6	56
	1-3	.15	.28			
	3-9	.10	.24			
	9-21	.15	.32			
	21-38	.15	.37			
	38-54	.05	.43			
	54	---	---			
Walkermine very gravelly loam----------	0-1	---	---	1	8	0
	1-3	.05	.24			
	3-12	.05	.28			
	12	---	---			
808:						
Bottlehill very gravelly loam----------	0-0.5	---	---	2	7	56
	0.5-2	---	---			
	2-4	.10	.28			
	4-9	.10	.24			
	9-13	.10	.24			
	13-22	.05	.32			
	22-33	.05	.32			
	33	---	---			
Walkermine very gravelly loam----------	0-1	---	---	1	8	0
	1-3	.05	.24			
	3-12	.05	.28			
	12	---	---			
Logtrain gravelly loam----------	0-1	---	---	3	6	56
	1-3	.15	.28			
	3-9	.10	.24			
	9-21	.15	.32			
	21-38	.15	.37			
	38-54	.05	.43			
	54	---	---			
809:						
Walkermine very gravelly loam----------	0-1	---	---	1	8	0
	1-3	.05	.24			
	3-12	.05	.28			
	12	---	---			
Bottlehill very gravelly loam----------	0-0.5	---	---	2	7	56
	0.5-2	---	---			
	2-4	.10	.28			
	4-9	.10	.24			
	9-13	.10	.24			
	13-22	.05	.32			
	22-33	.05	.32			
	33	---	---			
Logtrain gravelly loam----------	0-1	---	---	3	6	56
	1-3	.15	.28			
	3-9	.10	.24			
	9-21	.15	.32			
	21-38	.15	.37			
	38-54	.05	.43			
	54	---	---			
Rock outcrop, metavolcanic.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
810:						
Dixmine very gravelly loam----------	0-1	---	---	4	8	48
	1-2	---	---			
	2-6	.10	.28			
	6-11	.10	.28			
	11-17	.15	.32			
	17-30	.15	.37			
	30-41	.10	.37			
	41-54	.10	.43			
	54	---	---			
Mac gravelly loam----------	0-1	---	---	3	7	48
	1-4	.17	.24			
	4-9	.10	.24			
	9-15	.20	.37			
	15-23	.32	.43			
	23-37	.10	.55			
	37	---	---			
Spine very gravelly loam----------	0-1	---	---	1	7	56
	1-3	.10	.28			
	3-9	.10	.37			
	9-16	.05	.43			
	16	---	---			
811:						
Powellton gravelly loam----------	0-0.5	---	---	5	7	48
	0.5-2	---	---			
	2-4	.15	.28			
	4-9	.15	.28			
	9-15	.24	.32			
	15-24	.28	.32			
	24-30	.32	.32			
	30-41	.55	.55			
	41-61	.55	.55			
	61-83	.55	.55			
Toadtown loam----------	0-2	---	---	5	6	48
	2-3	---	---			
	3-5	.24	.28			
	5-8	.15	.24			
	8-13	.24	.28			
	13-18	.24	.28			
	18-27	.32	.32			
	27-51	.49	.49			
	51-65	.49	.49			
	65-75	.49	.49			
	75-79	.55	.55			
812:						
Powellton gravelly loam----------	0-0.5	---	---	5	7	48
	0.5-2	---	---			
	2-4	.15	.28			
	4-9	.15	.28			
	9-15	.24	.32			
	15-24	.28	.32			
	24-30	.32	.32			
	30-41	.55	.55			
	41-61	.55	.55			
	61-83	.55	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
812:						
Toadtown loam	0-2	---	---	5	6	48
	2-3	---	---			
	3-5	.24	.28			
	5-8	.15	.24			
	8-13	.24	.28			
	13-18	.24	.28			
	18-27	.32	.32			
	27-51	.49	.49			
	51-65	.49	.49			
	65-75	.49	.49			
	75-79	.55	.55			
813:						
Powellton gravelly loam	0-0.5	---	---	5	7	48
	0.5-2	---	---			
	2-4	.15	.28			
	4-9	.15	.28			
	9-15	.24	.32			
	15-24	.28	.32			
	24-30	.32	.32			
	30-41	.55	.55			
	41-61	.55	.55			
	61-83	.55	.55			
Toadtown loam	0-2	---	---	5	6	48
	2-3	---	---			
	3-5	.24	.28			
	5-8	.15	.24			
	8-13	.24	.28			
	13-18	.24	.28			
	18-27	.32	.32			
	27-51	.49	.49			
	51-65	.49	.49			
	65-75	.49	.49			
	75-79	.55	.55			
814:						
Mountyana gravelly loam	0-1	---	---	5	7	48
	1-2	---	---			
	2-4	.05	.17			
	4-9	.10	.15			
	9-13	.17	.28			
	13-19	.24	.32			
	19-26	.24	.32			
	26-37	.24	.37			
	37-52	.05	.43			
	52-65	.05	.37			
	65	---	---			
815:						
Mountyana gravelly loam	0-1	---	---	5	7	48
	1-2	---	---			
	2-4	.05	.17			
	4-9	.10	.15			
	9-13	.17	.28			
	13-19	.24	.32			
	19-26	.24	.32			
	26-37	.24	.37			
	37-52	.05	.43			
	52-65	.05	.37			
	65	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
817:						
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	2	4L	86
	0.5-1	---	---			
	1-3	.10	.24			
	3-6	.10	.24			
	6-13	.05	.24			
	13-21	.02	.17			
	21-35	.02	.32			
	35	---	---			
818:						
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	2	4L	86
	0.5-1	---	---			
	1-3	.10	.24			
	3-6	.10	.24			
	6-13	.05	.24			
	13-21	.02	.17			
	21-35	.02	.32			
	35	---	---			
819:						
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	2	4L	86
	0.5-1	---	---			
	1-3	.10	.24			
	3-6	.10	.24			
	6-13	.05	.24			
	13-21	.02	.17			
	21-35	.02	.32			
	35	---	---			
Rock outcrop, mudflow breccia.						
820:						
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	2	4L	86
	0.5-1	---	---			
	1-3	.10	.24			
	3-6	.10	.24			
	6-13	.05	.24			
	13-21	.02	.17			
	21-35	.02	.32			
	35	---	---			
Rock outcrop, mudflow breccia.						
821:						
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	2	4L	86
	0.5-1	---	---			
	1-3	.10	.24			
	3-6	.10	.24			
	6-13	.05	.24			
	13-21	.02	.17			
	21-35	.02	.32			
	35	---	---			
Rock outcrop, mudflow breccia.						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
822:						
Bonepile gravelly medial loam----------	0-1	---	---	4	6	56
	1-3	.20	.28			
	3-9	.15	.28			
	9-18	.10	.24			
	18-30	.10	.24			
	30-44	.10	.32			
	44	---	---			
823:						
Bonepile gravelly medial loam----------	0-1	---	---	4	6	56
	1-3	.20	.28			
	3-9	.15	.28			
	9-18	.10	.24			
	18-30	.10	.24			
	30-44	.10	.32			
	44	---	---			
824:						
Beecee very gravelly medial loam-------	0-0.5	---	---	5	6	56
	0.5-1	---	---			
	1-4	.10	.28			
	4-8	.10	.28			
	8-15	.05	.28			
	15-22	.05	.28			
	22-31	.10	.37			
	31-44	.10	.37			
	44-59	.10	.37			
	59-68	.10	.37			
	68-86	.10	.43			
825:						
Beecee very gravelly medial loam-------	0-0.5	---	---	5	6	56
	0.5-1	---	---			
	1-4	.10	.28			
	4-8	.10	.28			
	8-15	.05	.28			
	15-22	.05	.28			
	22-31	.10	.37			
	31-44	.10	.37			
	44-59	.10	.37			
	59-68	.10	.37			
	68-86	.10	.43			
Lydon very gravelly medial coarse sandy loam----------	0-0.5	---	---	2	4L	86
	0.5-1	---	---			
	1-3	.10	.24			
	3-6	.10	.24			
	6-13	.05	.24			
	13-21	.02	.17			
	21-35	.02	.32			
	35	---	---			
826:						
Redbone gravelly medial sandy loam-----	0-1	---	---	4	6	48
	1-2	---	---			
	2-4	.05	.10			
	4-7	.05	.10			
	7-17	.05	.15			
	17-28	.05	.17			
	28-41	.10	.24			
	41-54	.05	.24			
	54	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
827:						
Redbone gravelly medial sandy loam-----	0-1	---	---	4	6	48
	1-2	---	---			
	2-4	.05	.10			
	4-7	.05	.10			
	7-17	.05	.15			
	17-28	.05	.17			
	28-41	.10	.24			
	41-54	.05	.24			
	54	---	---			
829:						
Paradiso loam----------	0-2	---	---	5	6	48
	2-4	.17	.20			
	4-9	.15	.17			
	9-16	.24	.28			
	16-25	.28	.32			
	25-45	.28	.28			
	45-58	.37	.37			
	58-74	.43	.43			
	74-84	.37	.43			
830:						
Paradiso loam----------	0-2	---	---	5	6	48
	2-4	.17	.20			
	4-9	.15	.17			
	9-16	.24	.28			
	16-25	.28	.32			
	25-45	.28	.28			
	45-58	.37	.37			
	58-74	.43	.43			
	74-84	.37	.43			
831:						
Surnuf gravelly loam----------	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Bigridge loam----------	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
Spine very gravelly loam----------	0-1	---	---	1	7	56
	1-3	.10	.28			
	3-9	.10	.37			
	9-16	.05	.43			
	16	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
832:						
Surnuf gravelly loam	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Bigridge loam	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
Spine very gravelly loam	0-1	---	---	1	7	56
	1-3	.10	.28			
	3-9	.10	.37			
	9-16	.05	.43			
	16	---	---			
833:						
Surnuf gravelly loam	0-1	---	---	5	7	48
	1-4	.10	.24			
	4-9	.15	.24			
	9-16	.15	.24			
	16-27	.17	.28			
	27-29	.17	.28			
	29-56	.24	.37			
	56-72	.32	.43			
Bigridge loam	0-1	---	---	3	5	56
	1-5	.20	.28			
	5-9	.15	.28			
	9-15	.24	.37			
	15-20	.20	.37			
	20-27	.15	.49			
	27-36	.05	.49			
	36-51	.20	.49			
	51-62	---	---			
Spine very gravelly loam	0-1	---	---	1	7	56
	1-3	.10	.28			
	3-9	.10	.37			
	9-16	.05	.43			
	16	---	---			
834:						
Hietanen gravelly loam	0-1	---	---	4	7	48
	1-3	.15	.28			
	3-8	.15	.24			
	8-19	.28	.37			
	19-30	.37	.49			
	30-53	.43	.55			
	53	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
834:						
Mac gravelly loam----------	0-1	---	---	3	7	48
	1-4	.17	.24			
	4-9	.10	.24			
	9-15	.20	.37			
	15-23	.32	.43			
	23-37	.10	.55			
	37	---	---			
835:						
Hietanen gravelly loam----------	0-1	---	---	4	7	48
	1-3	.15	.28			
	3-8	.15	.24			
	8-19	.28	.37			
	19-30	.37	.49			
	30-53	.43	.55			
	53	---	---			
Mac gravelly loam----------	0-1	---	---	3	7	48
	1-4	.17	.24			
	4-9	.10	.24			
	9-15	.20	.37			
	15-23	.32	.43			
	23-37	.10	.55			
	37	---	---			
836:						
Hietanen gravelly loam----------	0-1	---	---	4	7	48
	1-3	.15	.28			
	3-8	.15	.24			
	8-19	.28	.37			
	19-30	.37	.49			
	30-53	.43	.55			
	53	---	---			
Mac gravelly loam----------	0-1	---	---	3	7	48
	1-4	.17	.24			
	4-9	.10	.24			
	9-15	.20	.37			
	15-23	.32	.43			
	23-37	.10	.55			
	37	---	---			
Spine very gravelly loam----------	0-1	---	---	1	7	56
	1-3	.10	.28			
	3-9	.10	.37			
	9-16	.05	.43			
	16	---	---			
837:						
Hietanen gravelly loam----------	0-1	---	---	4	7	48
	1-3	.15	.28			
	3-8	.15	.24			
	8-19	.28	.37			
	19-30	.37	.49			
	30-53	.43	.55			
	53	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
837:						
Spine very gravelly loam	0-1	---	---	1	7	56
	1-3	.10	.28			
	3-9	.10	.37			
	9-16	.05	.43			
	16	---	---			
Mac gravelly loam	0-1	---	---	3	7	48
	1-4	.17	.24			
	4-9	.10	.24			
	9-15	.20	.37			
	15-23	.32	.43			
	23-37	.10	.55			
	37	---	---			
838:						
Dixmine very gravelly loam	0-1	---	---	4	8	48
	1-2	---	---			
	2-6	.10	.28			
	6-11	.10	.28			
	11-17	.15	.32			
	17-30	.15	.37			
	30-41	.10	.37			
	41-54	.10	.43			
	54	---	---			
Spine very gravelly loam	0-1	---	---	1	7	56
	1-3	.10	.28			
	3-9	.10	.37			
	9-16	.05	.43			
	16	---	---			
Mac gravelly loam	0-1	---	---	3	7	48
	1-4	.17	.24			
	4-9	.10	.24			
	9-15	.20	.37			
	15-23	.32	.43			
	23-37	.10	.55			
	37	---	---			
839:						
Chawanakee gravelly sandy loam	0-1	---	---	2	4	86
	1-2	---	---			
	2-5	.37	.55			
	5-11	.37	.55			
	11-19	.28	.55			
	19	---	---			
Billscabin gravelly sandy loam	0-2	---	---	5	3	86
	2-5	.32	.55			
	5-14	.20	.55			
	14-27	.20	.55			
	27-37	.24	.55			
	37-57	.20	.55			
	57-82	.24	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
841:						
Billscabin gravelly sandy loam---------	0-2	---	---	5	3	86
	2-5	.32	.55			
	5-14	.20	.55			
	14-27	.20	.55			
	27-37	.24	.55			
	37-57	.20	.55			
	57-82	.24	.55			
Bonneyridge sandy loam-----------------	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
842:						
Billscabin gravelly sandy loam---------	0-2	---	---	5	3	86
	2-5	.32	.55			
	5-14	.20	.55			
	14-27	.20	.55			
	27-37	.24	.55			
	37-57	.20	.55			
	57-82	.24	.55			
Bonneyridge sandy loam-----------------	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
846:						
Bonneyridge sandy loam-----------------	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Lewisflat loam-------------------------	0-3	---	---	5	5	56
	3-5	.24	.28			
	5-9	.32	.37			
	9-18	.32	.43			
	18-33	.49	.49			
	33-49	.49	.49			
	49-65	.55	.55			
	65-75	.55	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
847:						
Bonneyridge sandy loam	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Lewisflat loam	0-3	---	---	5	5	56
	3-5	.24	.28			
	5-9	.32	.37			
	9-18	.32	.43			
	18-33	.49	.49			
	33-49	.49	.49			
	49-65	.55	.55			
	65-75	.55	.55			
848:						
Bonneyridge sandy loam	0-1	---	---	5	3	86
	1-3	.49	.55			
	3-6	.43	.55			
	6-16	.49	.55			
	16-22	.49	.55			
	22-31	.43	.55			
	31-39	.55	.55			
	39-56	.55	.55			
	56-76	.37	.55			
Lewisflat loam	0-3	---	---	5	5	56
	3-5	.24	.28			
	5-9	.32	.37			
	9-18	.32	.43			
	18-33	.49	.49			
	33-49	.49	.49			
	49-65	.55	.55			
	65-75	.55	.55			
850:						
Lewisflat loam	0-3	---	---	5	5	56
	3-5	.24	.28			
	5-9	.32	.37			
	9-18	.32	.43			
	18-33	.49	.49			
	33-49	.49	.49			
	49-65	.55	.55			
	65-75	.55	.55			
851:						
Lewisflat loam	0-3	---	---	5	5	56
	3-5	.24	.28			
	5-9	.32	.37			
	9-18	.32	.43			
	18-33	.49	.49			
	33-49	.49	.49			
	49-65	.55	.55			
	65-75	.55	.55			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
852:						
Lewisflat loam	0-3	---	---	5	5	56
	3-5	.24	.28			
	5-9	.32	.37			
	9-18	.32	.43			
	18-33	.49	.49			
	33-49	.49	.49			
	49-65	.55	.55			
	65-75	.55	.55			
860:						
Toadtown gravelly loam	0-1	---	---	5	5	56
	1-6	.10	.20			
	6-15	.32	.32			
	15-32	.28	.28			
	32-43	.32	.32			
	43-55	.28	.37			
	55-80	.28	.37			
Powellton silt loam	0-1	---	---	5	6	48
	1-3	.32	.32			
	3-9	.32	.32			
	9-19	.37	.37			
	19-28	.37	.37			
	28-33	.37	.37			
	33-48	.43	.43			
	48-66	.43	.43			
	66-73	.37	.37			
	73-83	.37	.37			
	83-109	.37	.37			
861:						
Toadtown gravelly loam	0-1	---	---	5	5	56
	1-6	.10	.20			
	6-15	.32	.32			
	15-32	.28	.28			
	32-43	.32	.32			
	43-55	.28	.37			
	55-80	.28	.37			
Powellton silt loam	0-1	---	---	5	6	48
	1-3	.32	.32			
	3-9	.32	.32			
	9-19	.37	.37			
	19-28	.37	.37			
	28-33	.37	.37			
	33-48	.43	.43			
	48-66	.43	.43			
	66-73	.37	.37			
	73-83	.37	.37			
	83-109	.37	.37			
862:						
Toadtown gravelly loam	0-1	---	---	5	5	56
	1-6	.10	.20			
	6-15	.32	.32			
	15-32	.28	.28			
	32-43	.32	.32			
	43-55	.28	.37			
	55-80	.28	.37			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
862:						
Powellton silt loam----------	0-1	---	---	5	6	48
	1-3	.32	.32			
	3-9	.32	.32			
	9-19	.37	.37			
	19-28	.37	.37			
	28-33	.37	.37			
	33-48	.43	.43			
	48-66	.43	.43			
	66-73	.37	.37			
	73-83	.37	.37			
	83-109	.37	.37			
863:						
Toadtown gravelly loam----------	0-1	---	---	5	5	56
	1-6	.10	.20			
	6-15	.32	.32			
	15-32	.28	.28			
	32-43	.32	.32			
	43-55	.28	.37			
	55-80	.28	.37			
Powellton silt loam----------	0-1	---	---	5	6	48
	1-3	.32	.32			
	3-9	.32	.32			
	9-19	.37	.37			
	19-28	.37	.37			
	28-33	.37	.37			
	33-48	.43	.43			
	48-66	.43	.43			
	66-73	.37	.37			
	73-83	.37	.37			
	83-109	.37	.37			
880:						
Sites taxadjunct gravelly loam---------	0-1	---	---	5	5	56
	1-3	.17	.28			
	3-10	.10	.24			
	10-21	.17	.32			
	21-34	.24	.37			
	34-59	.24	.32			
	59-72	.24	.28			
Jocal taxadjunct gravelly loam---------	0-3	---	---	5	5	56
	3-4	.15	.24			
	4-9	.15	.24			
	9-19	.10	.24			
	19-33	.10	.24			
	33-46	.10	.28			
	46-52	.05	.28			
	52-68	---	---			
881:						
Sites taxadjunct gravelly loam---------	0-1	---	---	5	5	56
	1-3	.17	.28			
	3-10	.10	.24			
	10-21	.17	.32			
	21-34	.24	.37			
	34-59	.24	.32			
	59-72	.24	.28			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
881:						
Jocal taxadjunct gravelly loam---------	0-3	---	---	5	5	56
	3-4	.15	.24			
	4-9	.15	.24			
	9-19	.10	.24			
	19-33	.10	.24			
	33-46	.10	.28			
	46-52	.05	.28			
	52-68	---	---			
882:						
Sites taxadjunct gravelly loam---------	0-1	---	---	5	5	56
	1-3	.17	.28			
	3-10	.10	.24			
	10-21	.17	.32			
	21-34	.24	.37			
	34-59	.24	.32			
	59-72	.24	.28			
Jocal taxadjunct gravelly loam---------	0-3	---	---	5	5	56
	3-4	.15	.24			
	4-9	.15	.24			
	9-19	.10	.24			
	19-33	.10	.24			
	33-46	.10	.28			
	46-52	.05	.28			
	52-68	---	---			
883:						
Sites taxadjunct gravelly loam---------	0-1	---	---	5	5	56
	1-3	.17	.28			
	3-10	.10	.24			
	10-21	.17	.32			
	21-34	.24	.37			
	34-59	.24	.32			
	59-72	.24	.28			
Jocal taxadjunct gravelly loam---------	0-3	---	---	5	5	56
	3-4	.15	.24			
	4-9	.15	.24			
	9-19	.10	.24			
	19-33	.10	.24			
	33-46	.10	.28			
	46-52	.05	.28			
	52-68	---	---			
885:						
Rogerville silt loam--------------------	0-2	---	---	5	5	56
	2-7	.24	.24			
	7-13	.15	.17			
	13-24	.20	.28			
	24-34	.15	.24			
	34-42	.10	.28			
	42-51	.02	.24			
	51-55	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
886:						
Rogerville silt loam	0-2	---	---	5	5	56
	2-7	.24	.24			
	7-13	.15	.17			
	13-24	.20	.28			
	24-34	.15	.24			
	34-42	.10	.28			
	42-51	.02	.24			
	51-55	---	---			
892:						
Rogerville silt loam	0-2	---	---	5	5	56
	2-7	.24	.24			
	7-13	.15	.17			
	13-24	.20	.28			
	24-34	.15	.24			
	34-42	.10	.28			
	42-51	.02	.24			
	51-55	---	---			
893:						
Rogerville silt loam	0-2	---	---	5	5	56
	2-7	.24	.24			
	7-13	.15	.17			
	13-24	.20	.28			
	24-34	.15	.24			
	34-42	.10	.28			
	42-51	.02	.24			
	51-55	---	---			
902:						
Lava flows, Lovejoy basalt.						
Lumpkin gravelly medial sandy loam	0-3	.05	.10	1	3	86
	3-8	.02	.10			
	8-14	.02	.10			
	14	---	---			
903:						
Mudwash gravelly medial sandy loam	0-1	---	---	5	3	86
	1-4	---	---			
	4-8	.10	.15			
	8-13	.05	.10			
	13-26	.05	.17			
	26-35	.24	.37			
	35-52	.24	.37			
	52-72	.02	.37			
	72-89	---	---			
Timberisland very gravelly medial sandy loam	0-2	---	---	3	3	86
	2-3	---	---			
	3-6	.05	.10			
	6-14	.02	.10			
	14-25	.02	.10			
	25-35	.02	.10			
	35-48	.02	.15			
	48	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
903:						
Lavatop gravelly medial fine sandy loam	0-0.5	---	---	2	3	86
	0.5-4	.05	.10			
	4-15	.05	.10			
	15-26	.02	.10			
	26	---	---			
904:						
Lava flows, Lovejoy basalt.						
Lavatop gravelly medial fine sandy loam	0-0.5	---	---	2	3	86
	0.5-4	.05	.10			
	4-15	.05	.10			
	15-26	.02	.10			
	26	---	---			
905:						
Lava flows, Lovejoy basalt.						
Lumpkin gravelly medial sandy loam	0-3	.05	.10	1	3	86
	3-8	.02	.10			
	8-14	.02	.10			
	14	---	---			
906:						
Lava flows, Lovejoy basalt.						
Lumpkin gravelly medial sandy loam	0-3	.05	.10	1	3	86
	3-8	.02	.10			
	8-14	.02	.10			
	14	---	---			
911:						
Endoaquolls loam	0-3	.20	.20	5	6	48
	3-8	.24	.24			
	8-17	.24	.24			
	17-28	.32	.32			
	28-43	.28	.28			
	43-58	.37	.37			
	58-73	.20	.20			
923:						
Powderhouse medial sandy loam	0-2	---	---	2	3	86
	2-4	.10	.10			
	4-11	.10	.10			
	11-27	.02	.10			
	27-36	.02	.10			
	36-82	---	---			
McNair medial coarse sandy loam	0-3	---	---	4	3	86
	3-6	.10	.17			
	6-16	.10	.15			
	16-25	.05	.15			
	25-33	.05	.10			
	33-48	.05	.10			
	48-57	.02	.10			
	57-88	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
923:						
Greenwell medial sandy loam----------	0-2	---	---	2	3	86
	2-3	---	---			
	3-5	.10	.10			
	5-10	.10	.10			
	10-18	.10	.10			
	18-23	.10	.10			
	23-32	.05	.10			
	32	---	---			
924:						
Powderhouse medial sandy loam----------	0-2	---	---	2	3	86
	2-4	.10	.10			
	4-11	.10	.10			
	11-27	.02	.10			
	27-36	.02	.10			
	36-82	---	---			
McNair medial coarse sandy loam--------	0-3	---	---	4	3	86
	3-6	.10	.17			
	6-16	.10	.15			
	16-25	.05	.15			
	25-33	.05	.10			
	33-48	.05	.10			
	48-57	.02	.10			
	57-88	---	---			
Greenwell medial sandy loam----------	0-2	---	---	2	3	86
	2-3	---	---			
	3-5	.10	.10			
	5-10	.10	.10			
	10-18	.10	.10			
	18-23	.10	.10			
	23-32	.05	.10			
	32	---	---			
925:						
Powderhouse medial sandy loam----------	0-2	---	---	2	3	86
	2-4	.10	.10			
	4-11	.10	.10			
	11-27	.02	.10			
	27-36	.02	.10			
	36-82	---	---			
McNair medial coarse sandy loam--------	0-3	---	---	4	3	86
	3-6	.10	.17			
	6-16	.10	.15			
	16-25	.05	.15			
	25-33	.05	.10			
	33-48	.05	.10			
	48-57	.02	.10			
	57-88	---	---			
Greenwell medial sandy loam----------	0-2	---	---	2	3	86
	2-3	---	---			
	3-5	.10	.10			
	5-10	.10	.10			
	10-18	.10	.10			
	18-23	.10	.10			
	23-32	.05	.10			
	32	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
930:						
Shakeridge gravelly medial coarse sandy loam	0-2	---	---	5	3	86
	2-4	.05	.10			
	4-7	.02	.10			
	7-19	.02	.15			
	19-25	.02	.15			
	25-36	.02	.20			
	36-55	.05	.24			
	55-71	.05	.24			
	71-87	.05	.24			
Timberisland very gravelly medial sandy loam	0-2	---	---	3	3	86
	2-3	---	---			
	3-6	.05	.10			
	6-14	.02	.10			
	14-25	.02	.10			
	25-35	.02	.10			
	35-48	.02	.15			
	48	---	---			
931:						
Shakeridge gravelly medial coarse sandy loam	0-2	---	---	5	3	86
	2-4	.05	.10			
	4-7	.02	.10			
	7-19	.02	.15			
	19-25	.02	.15			
	25-36	.02	.20			
	36-55	.05	.24			
	55-71	.05	.24			
	71-87	.05	.24			
Mudwash gravelly medial sandy loam	0-1	---	---	5	3	86
	1-4	---	---			
	4-8	.10	.15			
	8-13	.05	.10			
	13-26	.05	.17			
	26-35	.24	.37			
	35-52	.24	.37			
	52-72	.02	.37			
	72-89	---	---			
Timberisland very gravelly medial sandy loam	0-2	---	---	3	3	86
	2-3	---	---			
	3-6	.05	.10			
	6-14	.02	.10			
	14-25	.02	.10			
	25-35	.02	.10			
	35-48	.02	.15			
	48	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
932:						
Shakeridge gravelly medial coarse sandy loam	0-2	---	---	5	3	86
	2-4	.05	.10			
	4-7	.02	.10			
	7-19	.02	.15			
	19-25	.02	.15			
	25-36	.02	.20			
	36-55	.05	.24			
	55-71	.05	.24			
	71-87	.05	.24			
Mudwash gravelly medial sandy loam	0-1	---	---	5	3	86
	1-4	---	---			
	4-8	.10	.15			
	8-13	.05	.10			
	13-26	.05	.17			
	26-35	.24	.37			
	35-52	.24	.37			
	52-72	.02	.37			
	72-89	---	---			
933:						
Shakeridge gravelly medial coarse sandy loam	0-2	---	---	5	3	86
	2-4	.05	.10			
	4-7	.02	.10			
	7-19	.02	.15			
	19-25	.02	.15			
	25-36	.02	.20			
	36-55	.05	.24			
	55-71	.05	.24			
	71-87	.05	.24			
934:						
Mudwash gravelly medial sandy loam	0-1	---	---	5	3	86
	1-4	---	---			
	4-8	.10	.15			
	8-13	.05	.10			
	13-26	.05	.17			
	26-35	.24	.37			
	35-52	.24	.37			
	52-72	.02	.37			
	72-89	---	---			
939:						
Fluvaquentic Humaquepts very fine sandy loam	0-7	.24	.24	5	3	86
	7-15	.28	.28			
	15-22	.32	.32			
	22-29	.32	.32			
	29-36	.32	.32			
	36-45	.24	.37			
	45-60	.15	.32			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
940:						
Dejonah gravelly loam	0-1	---	---	5	5	56
	1-4	.24	.37			
	4-10	.28	.32			
	10-16	.28	.32			
	16-28	.32	.32			
	28-37	.37	.37			
	37-53	.24	.24			
	53-60	.32	.32			
Stagpoint loam	0-0.5	---	---	5	5	56
	0.5-4	.28	.37			
	4-10	.24	.37			
	10-17	.10	.32			
	17-23	.10	.32			
	23-34	.05	.37			
	34-49	.10	.37			
	49-64	.10	.37			
	64-86	.15	.37			
941:						
Dejonah gravelly loam	0-1	---	---	5	5	56
	1-4	.24	.37			
	4-10	.28	.32			
	10-16	.28	.32			
	16-28	.32	.32			
	28-37	.37	.37			
	37-53	.24	.24			
	53-60	.32	.32			
Stagpoint loam	0-0.5	---	---	5	5	56
	0.5-4	.28	.37			
	4-10	.24	.37			
	10-17	.10	.32			
	17-23	.10	.32			
	23-34	.05	.37			
	34-49	.10	.37			
	49-64	.10	.37			
	64-86	.15	.37			
942:						
Stagpoint loam	0-0.5	---	---	5	5	56
	0.5-4	.28	.37			
	4-10	.24	.37			
	10-17	.10	.32			
	17-23	.10	.32			
	23-34	.05	.37			
	34-49	.10	.37			
	49-64	.10	.37			
	64-86	.15	.37			
Dejonah gravelly loam	0-1	---	---	5	5	56
	1-4	.24	.37			
	4-10	.28	.32			
	10-16	.28	.32			
	16-28	.32	.32			
	28-37	.37	.37			
	37-53	.24	.24			
	53-60	.32	.32			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
948:						
Stagpoint loam	0-0.5	---	---	5	5	56
	0.5-4	.28	.37			
	4-10	.24	.37			
	10-17	.10	.32			
	17-23	.10	.32			
	23-34	.05	.37			
	34-49	.10	.37			
	49-64	.10	.37			
	64-86	.15	.37			
Dejonah gravelly loam	0-1	---	---	5	5	56
	1-4	.24	.37			
	4-10	.28	.32			
	10-16	.28	.32			
	16-28	.32	.32			
	28-37	.37	.37			
	37-53	.24	.24			
	53-60	.32	.32			
949:						
Rogerville taxadjunct fine sandy loam	0-2	---	---	3	3	86
	2-4	.24	.28			
	4-7	.10	.20			
	7-21	.05	.17			
	21-26	.10	.32			
	26-33	.20	.43			
	33-44	.28	.43			
	44-57	.17	.37			
	57	---	---			
950:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam	0-4	.05	.24	1	6	48
	4-9	.10	.24			
	9	---	---			
Rock outcrop, olivine basalt, andesite, or mudflow.						
Powderhouse medial sandy loam	0-2	---	---	2	3	86
	2-4	.10	.10			
	4-11	.10	.10			
	11-27	.02	.10			
	27-36	.02	.10			
	36-82	---	---			
951:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam	0-4	.05	.24	1	6	48
	4-9	.10	.24			
	9	---	---			
Rock outcrop, andesite.						
Powderhouse medial sandy loam	0-2	---	---	2	3	86
	2-4	.10	.10			
	4-11	.10	.10			
	11-27	.02	.10			
	27-36	.02	.10			
	36-82	---	---			

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
960:						
Surnuf gravelly loam, high elevation---	0-0.5	---	---	5	6	48
	0.5-6	.20	.28			
	6-10	.24	.37			
	10-20	.20	.37			
	20-28	.10	.37			
	28-38	.20	.32			
	38-52	.20	.32			
	52-67	.15	.28			
	67-84	.15	.28			
961:						
Surnuf gravelly loam, high elevation---	0-0.5	---	---	5	6	48
	0.5-6	.20	.28			
	6-10	.24	.37			
	10-20	.20	.37			
	20-28	.10	.37			
	28-38	.20	.32			
	38-52	.20	.32			
	52-67	.15	.28			
	67-84	.15	.28			
962:						
Surnuf gravelly loam, high elevation---	0-0.5	---	---	5	6	48
	0.5-6	.20	.28			
	6-10	.24	.37			
	10-20	.20	.37			
	20-28	.10	.37			
	28-38	.20	.32			
	38-52	.20	.32			
	52-67	.15	.28			
	67-84	.15	.28			
963:						
Surnuf gravelly loam, high elevation---	0-0.5	---	---	5	6	48
	0.5-6	.20	.28			
	6-10	.24	.37			
	10-20	.20	.37			
	20-28	.10	.37			
	28-38	.20	.32			
	38-52	.20	.32			
	52-67	.15	.28			
	67-84	.15	.28			
990.						
Riverwash, frequently flooded						
991:						
Xerofluvents sandy loam, frequently flooded----------	0-6	.32	.32	5	3	86
	6-14	.32	.32			
	14-26	.37	.37			
	26-37	.37	.37			
	37-43	.24	.24			
	43-47	.20	.20			
	47-54	.37	.37			
	54-72	.28	.28			
	72-80	.37	.37			
995.						
Pits, gravel						

Table 22.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index
		K	Kf	T		
	In					
996. Dumps, excavated material						
997. Pits						
998. Dumps, landfill						
999. Water						
DAM. Dam, manmade						

Table 23.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
100:							
Anita clay	0-1	45-55	23-34	6.1-8.4	0	0	0
	1-3	45-55	17-27	6.1-8.4	0	0	0
	3-10	50-60	18-29	6.1-7.8	0	0	0
	10-15	50-60	18-29	6.1-7.8	0-2	0	0
	15-20	---	---	---	0-2	0	
Galt clay	0-3	40-60	26-46	6.1-7.8	0	0	0
	3-13	40-60	26-46	6.1-7.8	0	0	0
	13-29	40-60	15-34	6.6-7.8	0	0	0
	29-32	37-60	14-34	6.6-8.4	0-2	0	0
	32-39	---	---	---	0-1	0	
104:							
Bosquejo clay	0-8	40-50	30-45	6.1-7.3	0-2	0	
	8-19	40-55	30-45	6.6-8.0	0-2	0	0
	19-24	40-55	30-45	6.6-8.0	0-1	0	0
	24-37	30-45	25-40	7.4-8.4	1-15	0	0
	37-44	20-35	20-35	6.6-8.4	0-5	0	0
	44-46	20-35	20-35	6.6-8.4	0-5	0	0
	46-60	18-27	20-30	6.6-8.4	0-2	0	0
105:							
Busacca clay loam	0-3	30-40	24-33	6.1-7.8	0-1	0	
	3-8	30-40	24-33	6.1-7.8	0-1	0	
	8-16	35-42	26-33	6.6-7.5	0-1	0	
	16-28	35-42	26-33	6.6-7.5	0-1	0	
	28-43	35-42	26-33	6.6-7.5	0-1	0	
	43-60	25-35	19-27	7.0-8.5	0-2	0	0
	60-72	25-35	19-27	7.0-8.5	0-2	0	0
108:							
Tuscan gravelly loam	0-2	20-27	15-30	6.1-7.3	0	0	
	2-4	30-55	15-30	6.6-7.8	0	0	0
	4-7	30-55	15-30	6.6-7.8	0	0	0
	7-11	30-55	15-30	6.6-7.8	0	0	0
	11	---	---	---	0	0	
Igo gravelly loam	0-1	18-30	15-30	5.6-6.5	0	0	
	1-5	22-36	15-30	6.6-7.3	0	0	
	5-9	22-36	15-30	6.6-7.3	0	0	
	9	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
108:							
Anita clay	0-1	45-55	23-34	6.1-8.4	0	0	0
	1-3	45-55	17-27	6.1-8.4	0	0	0
	3-10	50-60	18-29	6.1-7.8	0	0	0
	10-15	50-60	18-29	6.1-7.8	0-2	0	0
	15-20	---	---	---	0-2	0	
109:							
Bosquejo clay loam	0-5	27-40	23-44	6.1-7.3	0-2	0	
	5-24	40-55	26-42	6.6-8.0	0-2	0	0
	24-40	40-55	26-42	6.6-8.0	0-2	0	0
	40-60	20-35	6.6-18	6.6-8.4	0-5	0	0
110:							
Bosquejo silt loam, overwash, occasionally flooded	0-8	18-27	16-31	6.1-7.3	0	0	
	8-22	40-50	32-53	6.6-8.0	0-2	0	0
	22-40	40-55	26-42	6.6-8.0	0-2	0	0
	40-55	20-35	6.6-23	6.6-8.4	0-5	0	0
	55-70	20-35	6.6-23	6.6-8.4	0-5	0	0
111yu:							
Auburn loam	0-17	12-25	5.0-20	5.6-7.3	0	0	
	17	---	---	---	---	---	
Sobrante loam	0-5	10-25	5.0-20	5.6-6.5	0	0	
	5-27	25-35	10-20	5.6-6.5	0	0	
	27-39	---	---	---	---	---	
	39	---	---	---	---	---	
114yu:							
Auburn gravelly loam	0-17	12-25	5.0-20	5.6-7.3	0	0	
	17	---	---	---	---	---	
Sobrante gravelly loam	0-5	10-25	5.0-20	5.6-6.5	0	0	
	5-35	25-35	10-20	5.6-6.5	0	0	
	35-40	---	---	---	---	---	
	40	---	---	---	---	---	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
118:							
Xerorthents, tailings	0-3	10-16	7.4-12	5.1-7.3	0	0	
	3-8	15-18	9.3-12	6.1-7.3	0	0	
	8-21	3-7	2.3-5.4	6.1-7.3	0	0	
	21-26	3-7	2.0-5.4	6.1-7.3	0	0	
	26-35	3-7	2.0-5.4	6.1-7.3	0	0	
	35-48	3-7	2.0-5.4	6.1-7.3	0	0	
	48-59	3-7	2.0-5.4	6.1-7.3	0	0	
	59-81	3-7	2.0-5.4	6.1-7.3	0	0	
118co:							
Clear Lake clay, frequently flooded	0-4	40-60	30-50	5.6-7.3	0-2	0-1	0
	4-10	40-60	30-50	5.6-7.3	0-2	0-1	0
	10-20	40-60	30-55	5.6-7.8	0-2	0-1	0
	20-34	40-60	30-50	5.6-7.8	0-2	0-1	0
	34-47	40-60	30-50	5.6-8.4	0-2	0-1	0
	47-59	40-60	30-45	7.4-9.0	0-2	0-1	0
	59-79	40-60	30-45	7.4-9.0	0-2	0-1	0
119:							
Xerorthents, tailings	0-3	10-16	7.4-12	5.1-7.3	0	0	
	3-8	15-18	9.3-12	6.1-7.3	0	0	
	8-21	3-7	2.3-5.4	6.1-7.3	0	0	
	21-26	3-7	2.0-5.4	6.1-7.3	0	0	
	26-35	3-7	2.0-5.4	6.1-7.3	0	0	
	35-48	3-7	2.0-5.4	6.1-7.3	0	0	
	48-59	3-7	2.0-5.4	6.1-7.3	0	0	
	59-81	3-7	2.0-5.4	6.1-7.3	0	0	
Urban land.							
119yu:							
Auburn gravelly loam	0-17	12-25	5.0-20	5.6-7.3	0	0	
	17	---	---	---	---	---	
Sobrante gravelly loam	0-5	10-25	5.0-20	5.6-6.5	0	0	
	5-35	25-35	10-20	5.6-6.5	0	0	
	35-40	---	---	---	---	---	
	40	---	---	---	---	---	
Rock outcrop.							

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
120:							
Gridley taxadjunct clay loam----------	0-4	27-30	18-29	6.6-8.4	0-1	0	0
	4-9	35-50	23-45	6.6-8.4	0-1	0	0
	9-15	35-50	6.0-31	6.6-8.4	0-1	0	0
	15-21	30-50	5.2-31	7.4-8.4	1-5	0	0
	21-60	5-25	1.1-4.5	---	1-5	0	0
121:							
Boga loam----------	0-3	18-27	15-20	6.1-7.3	0	0	0
	3-6	18-27	15-20	6.1-7.3	0	0	0
	6-14	20-40	15-20	6.1-7.8	0	0	0
	14-29	20-40	20-30	6.1-7.8	0	0	0
	29-53	20-40	20-30	6.1-7.8	0	0	0
	53-73	20-40	20-30	6.1-7.8	0	0	0
	73-80	5-20	15-20	6.1-8.4	0	0	0
Loemstone loam----------	0-2	18-27	15-20	6.1-7.3	0	0	0
	2-4	18-27	15-20	6.1-7.3	0	0	0
	4-10	18-27	15-20	6.1-7.3	0	0	0
	10-18	20-40	20-30	6.1-7.8	0	0	0
	18-23	20-40	20-30	6.1-7.8	0	0	0
	23-32	20-40	20-30	6.1-7.8	0	0	0
	32-40	20-40	20-30	6.1-7.8	0	0	0
	40-48	20-40	20-30	6.1-7.8	0	0	0
	48-57	5-20	15-20	6.1-8.4	0	0	0
121su:							
Columbia fine sandy loam, frequently flooded	0-14	8-18	5.0-10	6.6-7.8	0	0	0
	14-60	10-18	5.0-10	6.6-7.8	0	0	0
125:							
Gridley taxadjunct loam----------	0-10	25-27	17-26	6.6-8.4	0	0	0
	10-20	35-50	23-45	6.6-8.4	0	0	0
	20-22	30-50	5.2-31	7.4-8.4	1-5	0	0
	22-60	---	---	---	1-5	0	0
Calcic Haploxerolls sandy loam----------	0-5	15-23	5.0-15	6.8-8.5	0-1	0	4
	5-17	15-25	5.0-15	7.8-8.5	1-5	0	4
	17-20	12-27	5.0-15	7.8-8.5	1-5	0	4
	20-33	12-27	5.0-15	7.8-8.5	1-5	0	4
	33-44	12-20	5.0-15	8.0-8.6	0-5	0	4
	44-72	---	---	---	0-5	0	4

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
126:							
Liveoak sandy loam	0-4	16-20	14-17	6.1-7.3	0-1	0	
	4-17	16-20	14-17	6.1-7.3	0-1	0	
	17-37	12-25	10-20	6.6-7.3	0-1	0	
	37-48	12-25	10-20	6.6-7.3	0-1	0	
	48-61	12-25	9.8-20	6.6-7.3	0-1	0	
	61-71	4-19	3.6-15	6.6-7.3	0-1	0	
	71-75	4-19	3.6-15	6.6-7.3	0-1	0	
127:							
Gridley taxadjunct loam	0-10	25-27	17-26	6.6-8.4	0	0	0
	10-20	35-50	23-45	6.6-8.4	0	0	0
	20-22	30-50	5.2-31	7.4-8.4	1-5	0	0
	22-60	---	---	---	---	0	
130:							
Eastbiggs loam	0-3	15-27	8.0-14	5.6-7.3	0	0	
	3-10	15-27	7.9-14	5.6-7.3	0	0	
	10-17	20-35	10-18	6.1-7.3	0	0	
	17-27	40-50	21-26	6.6-7.3	0	0	
	27-34	---	---	---	---	0	
	34-60	---	---	---	---	0	
133:							
Eastbiggs loam	0-3	15-27	8.0-14	5.6-7.3	0	0	
	3-10	15-27	7.9-14	5.6-7.3	0	0	
	10-17	20-35	10-18	6.1-7.3	0	0	
	17-27	40-50	21-26	6.6-7.3	0	0	
	27-34	---	---	---	---	0	
	34-60	---	---	---	---	0	
Galt clay loam	0-6	30-40	20-32	6.1-7.8	0	0	0
	6-20	30-60	20-46	6.6-7.8	0	0	0
	20-27	40-60	15-34	6.6-7.8	0	0	0
	27-30	40-60	15-34	6.6-7.8	0	0	0
	30	---	---	---	0-1	0	0
136:							
Duric Xerarents, cut	0-3	17-45	10-27	6.0-7.2	0	0	
	3-8	25-48	14-29	6.0-8.0	0	0	0
	8-10	25-48	14-29	6.0-8.0	0	0	0
	10-13	42-55	23-31	6.5-8.0	0	0	0
	13	---	---	---	---	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
136:							
Duric Xerarents, fill----------	0-5	16-35	12-25	6.0-6.5	0	0	
	5-12	22-42	13-26	6.3-7.5	0	0	
	12-16	45-55	24-31	7.0-7.5	0	0	
	16-30	0-15	0.0-10	7.0-7.5	0	0	
	30-38	22-42	13-25	6.3-7.5	0	0	
	38-48	22-42	13-25	6.3-7.5	0	0	
	48	---	---	---	---	0	
Eastbiggs fine sandy loam, leveled----------	0-5	15-27	8.0-14	5.6-7.3	0	0	
	5-12	15-27	7.9-14	5.6-7.3	0	0	
	12-18	20-30	10-16	6.1-7.3	0	0	
	18-23	20-30	10-16	6.1-7.3	0	0	
	23-26	27-35	14-18	6.1-7.3	0	0	
	26-30	40-50	21-26	6.6-7.3	0	0	
	30	---	---	---	---	0	
138su:							
Liveoak sandy clay loam----------	0-13	14-25	10-20	6.1-7.8	0-1	0	0
	13-53	15-25	10-25	6.6-7.8	0-1	0	0
	53-60	5-19	5.0-15	6.1-7.8	0-1	0	0
139su:							
Liveoak taxadjunct loam, frequently flooded	0-6	18-25	10-15	7.4-8.4	0	0	0
	6-54	18-25	10-15	7.4-8.4	0-1	0	0
	54-63	---	---	---	---	---	
	63-73	10-18	5.0-10	6.6-7.3	0	0	0
Galt taxadjunct clay loam, frequently flooded----------	0-21	27-35	15-20	6.6-8.4	0	0	0
	21-22	0-0	---	---	1-3	---	
	22-25	10-20	5.0-10	6.6-8.4	1-2	0	0
	25-26	---	---	---	---	---	
	26	---	---	---	---	---	
143su:							
Marcum clay loam----------	0-16	27-35	20-25	6.6-8.4	0	0	0
	16-28	30-40	20-30	6.6-8.4	0	0	0
	28-40	40-60	30-40	6.6-8.4	0	0	0
	40-43	30-40	20-30	6.6-8.4	0-1	0	0
	43-62	---	---	---	---	---	
Gridley clay loam----------	0-19	27-35	20-25	6.6-8.4	0	0	0
	19-37	35-55	30-35	6.6-8.4	0	0	0
	37	---	---	---	---	---	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
149yu:							
Flanly sandy loam----------	0-9	8-20	5.0-15	6.1-6.5	0	0	
	9-16	18-25	5.0-15	5.6-6.0	0	0	
	16-34	25-35	10-25	5.6-6.0	0	0	
	34-38	---	---	---	---	---	
150:							
Columbia stratified sand to fine sandy loam	0-5	5-20	5.0-10	6.6-7.8	0	0	
	5-10	5-18	5.0-10	6.6-7.8	0	0	
	10-29	5-18	5.0-10	6.6-7.8	0	0	
	29-37	5-18	5.0-10	6.6-7.8	0	0	
	37-46	5-18	5.0-10	6.6-7.8	0	0	
	46-60	5-18	5.0-10	6.6-7.8	0	0	
150su:							
Olashes sandy loam----------	0-4	15-20	10-15	6.1-7.3	0	0	0
	4-52	20-35	15-20	6.6-7.8	0	0	0
	52-60	5-10	5.0-8.0	7.4-7.8	0	0	0
151yu:							
Flanly sandy loam----------	0-9	8-20	5.0-15	6.1-6.5	0	0	
	9-16	18-25	5.0-15	5.6-6.0	0	0	
	16-34	25-35	10-25	5.6-6.0	0	0	
	34-38	---	---	---	---	---	
152:							
Gianella fine sandy loam, frequently flooded	0-6	4-20	3.9-18	5.6-8.4	0	0	0
	6-15	1-15	1.0-13	6.1-8.4	0	0	0
	15-20	1-15	1.0-13	6.1-8.4	0	0	0
	20-22	1-15	1.0-13	6.1-8.4	0	0	0
	22-27	1-15	1.0-13	6.1-8.4	0	0	0
	27-32	1-15	1.0-13	6.1-8.4	0	0	0
	32-43	1-15	1.0-13	6.1-8.4	0	0	0
	43-64	1-15	1.0-13	6.1-8.4	0	0	0
	64-80	1-15	1.0-13	6.1-8.4	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
153:							
Gianella sandy loam, frequently flooded-----	0-6	4-20	3.9-18	5.6-8.4	0	0	0
	6-17	1-15	1.0-13	6.1-8.4	0	0	0
	17-24	1-15	1.0-13	6.1-8.4	0	0	0
	24-29	1-15	1.0-13	6.1-8.4	0	0	0
	29-32	1-15	1.0-13	6.1-8.4	0	0	0
	32-43	1-15	1.0-13	6.1-8.4	0	0	0
	43-57	1-15	1.0-13	6.1-8.4	0	0	0
	57-67	1-15	1.0-13	6.1-8.4	0	0	0
	67-68	1-15	1.0-13	6.1-8.4	0	0	0
	68-71	1-15	1.0-13	6.1-8.4	0	0	0
	71-80	1-15	1.0-13	6.1-8.4	0	0	0
	80-84	1-15	1.0-13	6.1-8.4	0	0	0
154:							
Gianella silt loam, frequently flooded------	0-2	4-22	3.9-25	5.6-8.4	0	0	0
	2-8	1-15	1.0-15	6.1-8.4	0	0	0
	8-15	1-15	1.0-15	6.1-8.4	0	0	0
	15-22	1-15	1.0-15	6.1-8.4	0	0	0
	22-31	1-15	1.0-20	6.1-8.4	0	0	0
	31-41	1-15	1.0-20	6.1-8.4	0	0	0
	41-50	1-15	1.0-25	6.1-8.4	0	0	0
	50-54	1-15	1.0-25	6.1-8.4	0	0	0
	54-64	1-15	1.0-25	6.1-8.4	0	0	0
	64-66	1-15	1.0-20	6.1-8.4	0	0	0
	66-69	1-15	1.0-20	6.1-8.4	0	0	0
	69-83	1-15	1.0-15	6.1-8.4	0	0	0
158:							
Gianella fine sandy loam, occasionally flooded----------	0-3	4-20	3.9-18	5.6-8.4	0	0	0
	3-12	4-20	3.9-18	5.6-8.4	0	0	0
	12-19	1-15	1.0-13	6.1-8.4	0	0	0
	19-28	1-15	1.0-13	6.1-8.4	0	0	0
	28-48	1-15	1.0-13	6.1-8.4	0	0	0
	48-57	1-15	1.0-13	6.1-8.4	0	0	0
	57-80	1-15	1.0-13	6.1-8.4	0	0	0
160:							
Gianella loam, occasionally flooded---------	0-18	7-22	6.4-19	5.6-8.4	0	0	0
	18-42	1-15	1.0-13	6.1-8.4	0	0	0
	42-52	1-15	1.0-13	6.1-8.4	0	0	0
	52-70	1-15	1.0-13	6.1-8.4	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
161:							
Gianella fine sandy loam, rarely flooded----	0-3	4-20	3.9-18	5.6-8.4	0	0	0
	3-12	4-20	3.9-18	5.6-8.4	0	0	0
	12-19	1-15	1.0-13	6.1-8.4	0	0	0
	19-28	1-15	1.0-13	6.1-8.4	0	0	0
	28-48	1-15	1.0-13	6.1-8.4	0	0	0
	48-57	1-15	1.0-13	6.1-8.4	0	0	0
	57-80	1-15	1.0-13	6.1-8.4	0	0	0
162:							
Gianella loam, rarely flooded----------	0-18	7-22	6.4-19	5.6-8.4	0	0	0
	18-42	1-15	1.0-13	6.1-8.4	0	0	0
	42-52	1-15	1.0-13	6.1-8.4	0	0	0
	52-70	1-15	1.0-13	6.1-8.4	0	0	0
163yu:							
Holillipah loamy sand----------	0-6	0-10	0.0-10	6.1-7.3	0	0	
	6-66	0-10	0.0-10	6.1-7.3	0	0	
165yu:							
Holland loam----------	0-15	12-25	10-25	5.1-6.5	0	0	
	15-65	25-35	10-20	5.1-6.0	0	0	
Hoda loam----------	0-7	7-18	5.0-25	5.6-6.5	0	0	
	7-14	18-30	5.0-20	5.1-6.0	0	0	
	14-72	35-50	---	4.5-5.5	0	0	
Hotaw loam----------	0-12	7-15	5.0-10	5.6-6.5	0	0	
	12-34	20-35	10-20	5.1-6.5	0	0	
	34	---	---	---	---	---	
173yu:							
Hotaw loam----------	0-12	7-15	5.0-10	5.6-6.5	0	0	
	12-34	20-35	10-20	5.1-6.5	0	0	
	34	---	---	---	---	---	
Chawanakee gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-5	2-6	8.0-15	5.6-6.5	0	0	
	5-11	2-6	2.0-10	5.1-6.5	0	0	
	11-19	2-6	2.0-10	5.1-6.5	0	0	
	19	---	---	---	0	0	
Holland loam----------	0-15	12-25	10-25	5.1-6.5	0	0	
	15-65	25-35	10-20	5.1-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
175:							
Farwell clay loam, rarely flooded----------	0-5	27-35	22-32	6.1-7.8	0-1	0	
	5-9	27-35	22-29	6.6-8.4	0-1	0	
	9-18	27-35	22-28	6.6-8.4	0-1	0	
	18-26	27-35	22-28	6.6-8.4	0-1	0	
	26-33	27-35	22-28	6.6-8.4	0-1	0	
	33-43	27-40	22-33	6.6-7.8	0-1	0	
	43-57	27-40	22-33	6.6-7.8	0-1	0	
	57-72	27-35	20-32	6.6-7.8	0-1	0	
	72-81	20-35	15-28	6.6-7.8	0-1	0	
176:							
Farwell loam, occasionally flooded----------	0-6	20-25	17-28	6.6-7.3	0	0	
	6-20	20-25	17-27	7.0-7.3	0	0	
	20-36	20-25	17-27	7.0-7.3	0	0	
	36-50	27-35	22-32	7.0-7.3	0	0	
	50-60	22-27	17-27	7.0-7.5	0-1	0	
176yu:							
Jocal loam----------	0-8	15-27	10-30	5.5-6.0	0	0	
	8-73	27-35	---	4.5-5.0	0	0	
177:							
Farwell silt loam, occasionally flooded-----	0-6	12-27	10-30	6.5-7.3	0	0	
	6-11	20-40	17-33	7.2-8.0	0	0	
	11-22	25-35	20-28	7.0-8.0	0	0	
	22-33	25-35	20-33	7.0-8.0	0	0	
	33-39	25-35	20-30	7.0-8.0	0	0	
	39-49	20-30	16-25	7.5-7.7	0-1	0	
	49-62	20-30	16-25	7.5-7.7	0-1	0	
178:							
Arbuckle gravelly loam----------	0-4	20-24	16-19	6.1-7.3	0	0	
	4-9	20-24	14-19	6.1-7.8	0	0	
	9-20	24-35	17-27	6.1-7.8	0	0	
	20-32	24-35	17-27	6.1-7.8	0	0	
	32-49	24-35	17-27	6.1-7.8	0	0	
	49-68	24-26	17-20	7.4-7.8	0	0	
	68-86	20-26	14-20	7.4-7.8	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
179:							
Moda taxadjunct loam----------	0-2	10-20	5.4-11	5.6-6.5	0-1	0	
	2-6	10-20	5.1-11	5.6-6.5	0-1	0	
	6-13	24-30	12-16	6.1-7.3	0-1	0	
	13-22	45-50	22-26	6.6-8.4	0-1	0	0
	22	---	---	---	1-3	0	0
Arbuckle gravelly loam----------	0-4	20-24	16-19	6.1-7.3	0	0	
	4-9	20-24	14-19	6.1-7.8	0	0	0
	9-20	24-35	17-27	6.1-7.8	0	0	0
	20-32	24-35	17-27	6.1-7.8	0	0	0
	32-49	24-35	17-27	6.1-7.8	0	0	0
	49-68	24-26	17-20	7.4-7.8	0	0	0
	68-86	20-26	14-20	7.4-7.8	0	0	0
180:							
Dodgeland silty clay loam, occasionally flooded----------	0-4	30-40	20-37	5.6-6.5	0-1	0	0
	4-8	40-45	26-41	6.1-7.3	0-1	0	0
	8-18	45-55	23-39	6.6-7.8	0-1	0	0
	18-33	45-55	23-39	6.6-7.8	0-1	0	0
	33-45	45-55	23-34	6.6-7.8	0-1	0	0
	45-53	40-55	15-27	7.4-8.4	0-1	0	0
	53-60	18-35	6.0-15	7.4-8.4	0-1	0	0
	60-70	18-35	6.0-15	7.4-8.4	0-1	0	0
	70-80	18-35	6.0-15	7.4-8.4	0-1	0	0
181:							
Dodgeland silty clay loam, frequently flooded----------	0-4	30-40	20-37	5.6-6.5	0-1	0	0
	4-8	40-45	26-41	6.1-7.3	0-1	0	0
	8-18	45-55	23-39	6.6-7.8	0-1	0	0
	18-33	45-55	23-39	6.6-7.8	0-1	0	0
	33-45	45-55	23-34	6.6-7.8	0-1	0	0
	45-53	40-55	15-27	7.4-8.4	0-1	0	0
	53-60	18-35	6.0-15	7.4-8.4	0-1	0	0
	60-70	18-35	6.0-15	7.4-8.4	0-1	0	0
	70-80	18-35	6.0-15	7.4-8.4	0-1	0	0
188yu:							
Mariposa taxadjunct gravelly loam----------	0-4	10-20	5.0-15	5.6-7.3	0	0	
	4-23	20-35	---	4.5-6.0	0	0	
	23	---	---	---	---	---	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
189:							
Esquon silt loam, overwash	0-4	12-27	9.1-29	6.1-7.3	0	0	0
	4-9	12-27	7.2-29	6.6-8.4	0	0	0
	9-15	12-27	4.2-29	6.6-8.4	0	0	0
	15-35	40-60	20-29	7.4-8.4	0-1	0	0
	35-48	40-60	12-29	7.4-8.4	0-1	0	0
	48-60	27-60	8.5-34	7.4-8.4	0-2	0	0
	60	---	---	---	5-14	0	0
189yu:							
Mariposa taxadjunct gravelly loam	0-4	10-20	5.0-15	5.6-7.3	0	0	
	4-23	20-35	---	4.5-6.0	0	0	
	23	---	---	---	---	---	
196yu:							
Mildred cobbly loam	0-3	18-27	10-20	5.6-6.5	0	0	
	3-9	27-35	10-20	6.1-7.3	0	0	
	9-23	35-60	15-40	6.1-7.3	0	0	
	23	---	---	---	---	---	
200:							
Parrott silt loam, occasionally flooded	0-2	18-27	16-30	6.1-7.8	0	0	0
	2-8	18-27	15-25	6.1-7.8	0	0	0
	8-20	18-27	15-30	6.1-7.8	0	0	0
	20-37	18-27	15-30	6.6-7.8	0	0	0
	37-49	18-27	15-30	6.6-7.8	0	0	0
	49-63	12-30	9.8-30	6.6-7.8	0-1	0	0
	63-89	12-30	9.8-30	6.6-7.8	0-1	0	0
201:							
Parrott silt loam, frequently flooded	0-2	18-27	16-30	6.1-7.8	0	0	0
	2-8	18-27	15-25	6.1-7.8	0	0	0
	8-20	18-27	15-30	6.1-7.8	0	0	0
	20-37	18-27	15-30	6.6-7.8	0	0	0
	37-49	18-27	15-30	6.6-7.8	0	0	0
	49-63	12-30	9.8-30	6.6-7.8	0-1	0	0
	63-89	12-30	9.8-30	6.6-7.8	0-1	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
203:							
Kusalslough silty clay loam, occasionally flooded	0-4	28-35	22-29	5.6-7.3	0-1	0	
	4-12	28-35	22-29	5.6-7.3	0-1	0	
	12-21	30-40	23-32	6.6-7.8	0-1	0	0
	21-31	30-40	24-32	6.6-7.8	0-1	0	0
	31-41	35-40	27-32	6.6-7.8	0-1	0	0
	41-57	40-55	28-42	6.6-7.8	0-1	0	0
	57-69	40-55	28-42	6.6-7.8	0-1	0	0
	69-80	40-55	28-42	6.6-7.8	0-1	0	0
205:							
Parrott silt loam, frequently flooded	0-2	18-27	16-30	6.1-7.8	0	0	0
	2-8	18-27	15-25	6.1-7.8	0	0	0
	8-20	18-27	15-30	6.1-7.8	0	0	0
	20-37	18-27	15-30	6.6-7.8	0	0	0
	37-49	18-27	15-30	6.6-7.8	0	0	0
	49-63	12-30	9.8-30	6.6-7.8	0-1	0	0
	63-89	12-30	9.8-30	6.6-7.8	0-1	0	0
Vermet silt loam, frequently flooded	0-2	18-25	15-30	6.1-7.8	0	0	0
	2-8	18-25	15-30	6.1-7.8	0	0	0
	8-13	18-25	15-30	6.1-7.8	0	0	0
	13-16	29-35	15-30	6.6-8.4	0-1	0	0
	16-26	29-35	15-30	6.6-8.4	0-1	0	0
	26-41	29-35	15-30	6.6-8.4	0-1	0	0
	41-62	30-40	9.0-30	6.6-8.4	0-1	0	0
	62-72	30-40	9.0-30	6.6-8.4	0-1	0	0
206:							
Islandbar sandy loam	0-2	---	---	---	0	0	
	2-5	10-18	12-20	5.6-7.3	0	0	
	5-9	10-18	5.0-16	5.6-7.3	0	0	
	9-27	5-18	2.0-10	5.1-7.3	0	0	
	27-36	5-18	2.0-10	5.1-7.3	0	0	
	36-47	5-18	2.0-10	5.1-7.3	0	0	
	47-58	5-18	2.0-10	5.1-7.3	0	0	
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	
Chawanakee gravelly sandy loam	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-5	2-6	8.0-15	5.6-6.5	0	0	
	5-11	2-6	2.0-10	5.1-6.5	0	0	
	11-19	2-6	2.0-10	5.1-6.5	0	0	
	19	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
207:							
Islandbar sandy loam----------	0-2	---	---	---	0	0	
	2-5	10-18	12-20	5.6-7.3	0	0	
	5-9	10-18	5.0-16	5.6-7.3	0	0	
	9-27	5-18	2.0-10	5.1-7.3	0	0	
	27-36	5-18	2.0-10	5.1-7.3	0	0	
	36-47	5-18	2.0-10	5.1-7.3	0	0	
	47-58	5-18	2.0-10	5.1-7.3	0	0	
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	
Chawanakee gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-5	2-6	8.0-15	5.6-6.5	0	0	
	5-11	2-6	2.0-10	5.1-6.5	0	0	
	11-19	2-6	2.0-10	5.1-6.5	0	0	
	19	---	---	---	0	0	
208:							
Islandbar sandy loam----------	0-2	---	---	---	0	0	
	2-5	10-18	12-20	5.6-7.3	0	0	
	5-9	10-18	5.0-16	5.6-7.3	0	0	
	9-27	5-18	2.0-10	5.1-7.3	0	0	
	27-36	5-18	2.0-10	5.1-7.3	0	0	
	36-47	5-18	2.0-10	5.1-7.3	0	0	
	47-58	5-18	2.0-10	5.1-7.3	0	0	
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	
Chawanakee gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-5	2-6	8.0-15	5.6-6.5	0	0	
	5-11	2-6	2.0-10	5.1-6.5	0	0	
	11-19	2-6	2.0-10	5.1-6.5	0	0	
	19	---	---	---	0	0	
209:							
Islandbar sandy loam----------	0-2	---	---	---	0	0	
	2-5	10-18	12-20	5.6-7.3	0	0	
	5-9	10-18	5.0-16	5.6-7.3	0	0	
	9-27	5-18	2.0-10	5.1-7.3	0	0	
	27-36	5-18	2.0-10	5.1-7.3	0	0	
	36-47	5-18	2.0-10	5.1-7.3	0	0	
	47-58	5-18	2.0-10	5.1-7.3	0	0	
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
209:							
Chawanakee gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-5	2-6	8.0-15	5.6-6.5	0	0	
	5-11	2-6	2.0-10	5.1-6.5	0	0	
	11-19	2-6	2.0-10	5.1-6.5	0	0	
	19	---	---	---	0	0	
210:							
Featherfalls sandy loam----------	0-1	---	---	---	0	0	
	1-4	8-23	10-20	5.1-6.5	0	0	
	4-7	8-23	10-20	5.1-6.5	0	0	
	7-17	16-33	20-30	5.1-7.3	0	0	
	17-24	16-33	20-30	5.1-7.3	0	0	
	24-32	16-33	20-30	5.1-7.3	0	0	
	32-42	16-33	20-30	5.1-7.3	0	0	
	42-61	25-38	30-40	5.6-6.5	0	0	
	61-72	25-38	30-40	5.6-6.5	0	0	
	72-80	5-27	---	5.0-6.0	0	0	
Islandbar sandy loam----------	0-2	---	---	---	0	0	
	2-5	10-18	12-20	5.6-7.3	0	0	
	5-9	10-18	5.0-16	5.6-7.3	0	0	
	9-27	5-18	2.0-10	5.1-7.3	0	0	
	27-36	5-18	2.0-10	5.1-7.3	0	0	
	36-47	5-18	2.0-10	5.1-7.3	0	0	
	47-58	5-18	2.0-10	5.1-7.3	0	0	
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	
211:							
Featherfalls sandy loam----------	0-1	---	---	---	0	0	
	1-4	8-23	10-20	5.1-6.5	0	0	
	4-7	8-23	10-20	5.1-6.5	0	0	
	7-17	16-33	20-30	5.1-7.3	0	0	
	17-24	16-33	20-30	5.1-7.3	0	0	
	24-32	16-33	20-30	5.1-7.3	0	0	
	32-42	16-33	20-30	5.1-7.3	0	0	
	42-61	25-38	30-40	5.6-6.5	0	0	
	61-72	25-38	30-40	5.6-6.5	0	0	
	72-80	5-27	---	5.0-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	S
	In	Pct	meq/100g	pH	Pct	Pct	
211:							
Islandbar sandy loam	0-2	---	---	---	0	0	
	2-5	10-18	12-20	5.6-7.3	0	0	
	5-9	10-18	5.0-16	5.6-7.3	0	0	
	9-27	5-18	2.0-10	5.1-7.3	0	0	
	27-36	5-18	2.0-10	5.1-7.3	0	0	
	36-47	5-18	2.0-10	5.1-7.3	0	0	
	47-58	5-18	2.0-10	5.1-7.3	0	0	
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	
212:							
Featherfalls sandy loam	0-1	---	---	---	0	0	
	1-4	8-23	10-20	5.1-6.5	0	0	
	4-7	8-23	10-20	5.1-6.5	0	0	
	7-17	16-33	20-30	5.1-7.3	0	0	
	17-24	16-33	20-30	5.1-7.3	0	0	
	24-32	16-33	20-30	5.1-7.3	0	0	
	32-42	16-33	20-30	5.1-7.3	0	0	
	42-61	25-38	30-40	5.6-6.5	0	0	
	61-72	25-38	30-40	5.6-6.5	0	0	
	72-80	5-27	---	5.0-6.0	0	0	
Islandbar sandy loam	0-2	---	---	---	0	0	
	2-5	10-18	12-20	5.6-7.3	0	0	
	5-9	10-18	5.0-16	5.6-7.3	0	0	
	9-27	5-18	2.0-10	5.1-7.3	0	0	
	27-36	5-18	2.0-10	5.1-7.3	0	0	
	36-47	5-18	2.0-10	5.1-7.3	0	0	
	47-58	5-18	2.0-10	5.1-7.3	0	0	
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	
213:							
Featherfalls sandy loam	0-1	---	---	---	0	0	
	1-4	8-23	10-20	5.1-6.5	0	0	
	4-7	8-23	10-20	5.1-6.5	0	0	
	7-17	16-33	20-30	5.1-7.3	0	0	
	17-24	16-33	20-30	5.1-7.3	0	0	
	24-32	16-33	20-30	5.1-7.3	0	0	
	32-42	16-33	20-30	5.1-7.3	0	0	
	42-61	25-38	30-40	5.6-6.5	0	0	
	61-72	25-38	30-40	5.6-6.5	0	0	
	72-80	5-27	---	5.0-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
213:							
Islandbar sandy loam----------	0-2	---	---	---	0	0	
	2-5	10-18	12-20	5.6-7.3	0	0	
	5-9	10-18	5.0-16	5.6-7.3	0	0	
	9-27	5-18	2.0-10	5.1-7.3	0	0	
	27-36	5-18	2.0-10	5.1-7.3	0	0	
	36-47	5-18	2.0-10	5.1-7.3	0	0	
	47-58	5-18	2.0-10	5.1-7.3	0	0	
	58-62	2-18	2.0-5.0	5.1-7.3	0	0	
	62-72	2-18	2.0-5.0	5.1-7.3	0	0	
214:							
Crystalhill gravelly coarse sandy loam------	0-2	---	---	---	0	0	
	2-7	5-8	5.0-16	4.5-6.5	0	0	
	7-14	5-12	2.0-10	5.1-6.5	0	0	
	14-22	5-12	2.0-10	5.1-6.5	0	0	
	22-33	5-12	2.0-10	5.1-6.5	0	0	
	33-44	5-12	2.0-10	5.1-6.5	0	0	
	44-66	1-14	2.0-10	5.1-6.5	0	0	
	66	---	---	---	0	0	
Oregongulch gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-4	5-12	5.0-16	6.1-7.3	0	0	
	4-7	3-15	2.0-10	5.1-6.5	0	0	
	7-13	3-15	2.0-10	5.1-6.5	0	0	
	13-18	3-15	2.0-10	5.1-6.5	0	0	
	18-24	3-13	2.0-10	5.6-6.5	0	0	
	24-60	0-10	---	---	0	0	
Craigsaddle coarse sandy loam----------	0-5	5-10	2.7-5.5	5.1-6.5	0	0	
	5-11	8-12	4.3-6.5	5.1-6.5	0	0	
	11-17	8-12	4.3-6.5	5.1-6.5	0	0	
	17-21	8-12	4.2-6.4	5.1-6.5	0	0	
	21-31	15-27	7.6-14	5.1-6.5	0	0	
	31-51	15-27	7.6-14	5.1-6.5	0	0	
	51-58	13-25	6.6-13	4.5-6.5	0	0	
	58-80	---	6.6-13	4.5-6.0	0	0	
Rock outcrop, trondhjemite.							

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
215:							
Crystalhill gravelly coarse sandy loam------	0-2	---	---	---	0	0	
	2-7	5-8	5.0-16	4.5-6.5	0	0	
	7-14	5-12	2.0-10	5.1-6.5	0	0	
	14-22	5-12	2.0-10	5.1-6.5	0	0	
	22-33	5-12	2.0-10	5.1-6.5	0	0	
	33-44	5-12	2.0-10	5.1-6.5	0	0	
	44-66	1-14	2.0-10	5.1-6.5	0	0	
	66	---	---	---	0	0	
Oregongulch gravelly sandy loam-------------	0-1	---	---	---	0	0	
	1-4	5-12	5.0-16	6.1-7.3	0	0	
	4-7	3-15	2.0-10	5.1-6.5	0	0	
	7-13	3-15	2.0-10	5.1-6.5	0	0	
	13-18	3-15	2.0-10	5.1-6.5	0	0	
	18-24	3-13	2.0-10	5.6-6.5	0	0	
	24-60	0-10	---	---	0	0	
Craigsaddle coarse sandy loam---------------	0-5	5-10	2.7-5.5	5.1-6.5	0	0	
	5-11	8-12	4.3-6.5	5.1-6.5	0	0	
	11-17	8-12	4.3-6.5	5.1-6.5	0	0	
	17-21	8-12	4.2-6.4	5.1-6.5	0	0	
	21-31	15-27	7.6-14	5.1-6.5	0	0	
	31-51	15-27	7.6-14	5.1-6.5	0	0	
	51-58	13-25	6.6-13	4.5-6.5	0	0	
	58-80	---	6.6-13	4.5-6.0	0	0	
Rock outcrop, trondhjemite.							
216:							
Crystalhill gravelly coarse sandy loam------	0-2	---	---	---	0	0	
	2-7	5-8	5.0-16	4.5-6.5	0	0	
	7-14	5-12	2.0-10	5.1-6.5	0	0	
	14-22	5-12	2.0-10	5.1-6.5	0	0	
	22-33	5-12	2.0-10	5.1-6.5	0	0	
	33-44	5-12	2.0-10	5.1-6.5	0	0	
	44-66	1-14	2.0-10	5.1-6.5	0	0	
	66	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
216:							
Oregongulch gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-4	5-12	5.0-16	6.1-7.3	0	0	
	4-7	3-15	2.0-10	5.1-6.5	0	0	
	7-13	3-15	2.0-10	5.1-6.5	0	0	
	13-18	3-15	2.0-10	5.1-6.5	0	0	
	18-24	3-13	2.0-10	5.6-6.5	0	0	
	24-60	0-10	---	---	0	0	
Craigsaddle coarse sandy loam----------	0-5	5-10	2.7-5.5	5.1-6.5	0	0	
	5-11	8-12	4.3-6.5	5.1-6.5	0	0	
	11-17	8-12	4.3-6.5	5.1-6.5	0	0	
	17-21	8-12	4.2-6.4	5.1-6.5	0	0	
	21-31	15-27	7.6-14	5.1-6.5	0	0	
	31-51	15-27	7.6-14	5.1-6.5	0	0	
	51-58	13-25	6.6-13	4.5-6.5	0	0	
	58-80	---	6.6-13	4.5-6.0	0	0	
Rock outcrop, trondhjemite.							
217:							
Crystalhill gravelly coarse sandy loam------	0-2	---	---	---	0	0	
	2-7	5-8	5.0-16	4.5-6.5	0	0	
	7-14	5-12	2.0-10	5.1-6.5	0	0	
	14-22	5-12	2.0-10	5.1-6.5	0	0	
	22-33	5-12	2.0-10	5.1-6.5	0	0	
	33-44	5-12	2.0-10	5.1-6.5	0	0	
	44-66	1-14	2.0-10	5.1-6.5	0	0	
	66	---	---	---	0	0	
Oregongulch gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-4	5-12	5.0-16	6.1-7.3	0	0	
	4-7	3-15	2.0-10	5.1-6.5	0	0	
	7-13	3-15	2.0-10	5.1-6.5	0	0	
	13-18	3-15	2.0-10	5.1-6.5	0	0	
	18-24	3-13	2.0-10	5.6-6.5	0	0	
	24-60	0-10	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
217:							
Craigsaddle coarse sandy loam----------	0-5	5-10	2.7-5.5	5.1-6.5	0	0	
	5-11	8-12	4.3-6.5	5.1-6.5	0	0	
	11-17	8-12	4.3-6.5	5.1-6.5	0	0	
	17-21	8-12	4.2-6.4	5.1-6.5	0	0	
	21-31	15-27	7.6-14	5.1-6.5	0	0	
	31-51	15-27	7.6-14	5.1-6.5	0	0	
	51-58	13-25	6.6-13	4.5-6.5	0	0	
	58-80	---	6.6-13	4.5-6.0	0	0	
Rock outcrop, trondhjemite.							
218:							
Rock outcrop, quartz diorite.							
Lithic Xerorthents gravelly sandy loam------	0-2	---	---	---	0	0	
	2-4	6-8	5.0-16	5.1-6.0	0	0	
	4-8	6-10	2.0-10	5.1-6.0	0	0	
	8	---	---	---	0	0	
Chawanakee gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-5	2-6	8.0-15	5.6-6.5	0	0	
	5-11	2-6	2.0-10	5.1-6.5	0	0	
	11-19	2-6	2.0-10	5.1-6.5	0	0	
	19	---	---	---	0	0	
219:							
Rock outcrop, quartz diorite.							
Lithic Xerorthents gravelly sandy loam------	0-2	---	---	---	0	0	
	2-4	6-8	5.0-16	5.1-6.0	0	0	
	4-8	6-10	2.0-10	5.1-6.0	0	0	
	8	---	---	---	0	0	
Chawanakee gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-5	2-6	8.0-15	5.6-6.5	0	0	
	5-11	2-6	2.0-10	5.1-6.5	0	0	
	11-19	2-6	2.0-10	5.1-6.5	0	0	
	19	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
220:							
Esquon clay, frequently flooded----------	0-10	40-60	26-49	6.1-7.3	0-1	0	0
	10-22	40-60	20-36	7.4-8.4	0-2	0	0
	22-40	40-60	19-36	7.4-8.4	0-2	0	0
	40-50	25-45	8.0-34	7.4-8.4	0-2	0	0
	50	---	---	7.9-8.4	5-14	0	0
Clear Lake silty clay loam, overwash--------	0-0.5	35-40	23-32	6.6-8.4	0-1	0	0
	0.5-7	40-60	26-49	7.4-8.4	0-2	0	0
	7-19	40-60	20-36	7.9-9.0	0-2	0	0
	19-29	40-60	19-36	7.9-9.0	0-2	0	0
	29-40	35-60	11-29	7.9-9.0	0-2	0	0
	40-55	35-60	11-29	7.9-9.0	0-2	0	0
	55-80	35-60	11-29	7.9-9.0	0-2	0	0
221yu:							
Sites loam----------	0-6	15-27	10-30	5.6-6.5	0	0	
	6-16	27-35	---	5.1-6.0	0	0	
	16-51	35-60	---	5.1-6.0	0	0	
	51-61	27-35	---	4.5-6.0	0	0	
	61	---	---	---	---	---	
222yu:							
Sites loam----------	0-6	15-27	10-30	5.6-6.5	0	0	
	6-16	27-35	---	5.1-6.0	0	0	
	16-51	35-60	---	5.1-6.0	0	0	
	51-61	27-35	---	4.5-6.0	0	0	
	61	---	---	---	---	---	
225yu:							
Sites gravelly loam, bedrock substratum-----	0-5	15-27	10-30	5.6-6.5	0	0	
	5-53	30-40	---	4.5-6.0	0	0	
	53	---	---	---	---	---	
226yu:							
Sites gravelly loam, bedrock substratum-----	0-5	15-27	10-30	5.6-6.5	0	0	
	5-53	30-40	---	4.5-6.0	0	0	
	53	---	---	---	---	---	
227yu:							
Sites gravelly loam, bedrock substratum-----	0-5	15-27	10-30	5.6-6.5	0	0	
	5-53	30-40	---	4.5-6.0	0	0	
	53	---	---	---	---	---	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
242yu:							
Surnuf loam	0-12	18-27	5.0-15	5.6-6.5	0	0	
	12-77	35-60	5.0-25	5.1-6.0	0	0	
243yu:							
Surnuf loam	0-12	18-27	5.0-15	5.6-6.5	0	0	
	12-77	35-60	5.0-25	5.1-6.0	0	0	
244yu:							
Surnuf loam	0-12	18-27	5.0-15	5.6-6.5	0	0	
	12-77	35-60	5.0-25	5.1-6.0	0	0	
245:							
Surnuf loam	0-12	18-27	5.0-15	5.6-6.5	0	0	
	12-77	35-60	5.0-25	5.1-6.0	0	0	
248yu:							
Trainer loam	0-9	18-27	10-20	6.6-7.8	0	0	
	9-36	18-27	10-15	7.9-8.4	0	0	
	36-66	10-18	5.0-10	7.9-8.4	0	0	
250:							
Llanoseco, occasionally flooded	0-8	27-35	25-35	5.6-6.5	0	0	0
	8-18	35-40	25-35	6.1-7.3	0	0	0
	18-28	40-50	30-40	6.6-7.8	0	0	0
	28-41	40-50	30-40	6.6-7.8	0	0	0
	41-57	40-60	30-40	7.4-9.0	0	0	0
	57-71	40-60	30-40	7.4-9.0	0	0	0
	71-83	40-60	30-35	7.9-9.0	0-2	0	0
	83-89	40-50	30-35	7.9-9.0	0-2	0	0
	89-93	---	20-25	---	0-49	0	0
252:							
Whitecabin silty clay, occasionally flooded	0-5	40-55	26-42	5.6-7.3	0-1	0	0
	5-13	45-55	13-36	6.1-9.0	0-1	0	0
	13-26	45-55	13-37	6.1-9.0	0-1	0	0
	26-35	45-55	13-37	6.1-9.0	0-1	0	0
	35-45	35-55	11-35	7.9-9.0	0-1	0	0
	45-53	35-55	11-33	7.9-9.0	0-1	0	0
	53-63	---	---	---	0-5	0	0
	63-72	---	---	---	0-5	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
252:							
Ordferry silty clay, occasionally flooded---	0-3	40-50	26-39	6.1-7.3	0-1	0	0
	3-6	40-60	26-46	6.1-7.3	0-1	0	0
	6-13	40-60	12-37	6.6-7.8	0-1	0	0
	13-25	40-60	12-37	7.4-8.4	0-1	0	0
	25-29	35-50	11-33	7.9-9.0	0-1	0	0
	29-33	---	---	---	0-5	0	0
	33-40	---	---	---	0-5	0	0
252yu:							
Woodleaf gravelly loam----------	0-9	18-27	10-20	5.6-6.5	0	0	
	9-28	35-60	15-35	5.6-6.5	0	0	
	28	---	---	---	---	---	
253yu:							
Woodleaf gravelly loam----------	0-9	18-27	10-20	5.6-6.5	0	0	
	9-28	35-60	15-35	5.6-6.5	0	0	
	28	---	---	---	---	---	
255:							
Whitecabin silty clay loam, occasionally flooded----------	0-8	27-40	26-42	5.6-7.3	0-1	0	0
	8-20	45-55	13-36	6.1-9.0	0-1	0	0
	20-44	45-55	13-37	6.1-9.0	0-1	0	0
	44-60	---	---	---	0-5	0	0
Ordferry silty clay, occasionally flooded---	0-3	40-50	26-39	6.1-7.3	0-1	0	0
	3-6	40-60	26-46	6.1-7.3	0-1	0	0
	6-13	40-60	12-37	6.6-7.8	0-1	0	0
	13-25	40-60	12-37	7.4-8.4	0-1	0	0
	25-29	35-50	11-33	7.9-9.0	0-1	0	0
	29-33	---	---	---	0-5	0	0
	33-40	---	---	---	0-5	0	0
256:							
Whitecabin silt loam, occasionally flooded--	0-6	18-27	26-42	5.6-7.3	0-1	0	0
	6-13	45-55	13-36	6.1-9.0	0-1	0	0
	13-27	45-55	13-37	6.1-9.0	0-1	0	0
	27-42	45-55	11-35	7.9-9.0	0-1	0	0
	42-54	35-40	11-33	7.9-9.0	0-1	0	0
	54-62	---	---	7.9-9.0	0-5	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
257:							
Llanoseco, frequently flooded----------	0-8	27-35	25-35	5.6-6.5	0	0	0
	8-18	35-40	25-35	6.1-7.3	0	0	0
	18-28	40-50	30-40	6.6-7.8	0	0	0
	28-41	40-50	30-40	6.6-7.8	0	0	0
	41-57	40-60	30-40	7.4-9.0	0	0	0
	57-71	40-60	30-40	7.4-9.0	0	0	0
	71-83	40-60	30-35	7.9-9.0	0-2	0	0
	83-89	40-50	30-35	7.9-9.0	0-2	0	0
	89-93	---	20-25	---	0-49	0	0
258:							
Codora, occasionally flooded----------	0-6	27-35	22-29	6.1-7.8	0	0	0
	6-11	27-35	22-29	6.1-7.8	0	0	0
	11-22	35-40	27-32	6.6-7.8	0	0	0
	22-38	35-40	27-31	6.6-7.8	0	0	0
	38-60	27-45	21-34	7.8-8.4	0-2	0	0
260:							
Ordferry silty clay, occasionally flooded---	0-3	40-50	26-39	6.1-7.3	0-1	0	0
	3-6	40-60	26-46	6.1-7.3	0-1	0	0
	6-13	40-60	12-37	6.6-7.8	0-1	0	0
	13-25	40-60	12-37	7.4-8.4	0-1	0	0
	25-29	35-50	11-33	7.9-9.0	0-1	0	0
	29-33	---	---	---	0-5	0	0
	33-40	---	---	---	0-5	0	0
280:							
Columbia taxadjunct very fine sandy loam----	0-8	5-15	4.6-14	6.6-7.8	0	0	0
	8-10	5-15	4.6-14	6.6-7.8	0	0	0
	10-19	5-15	4.6-14	6.6-7.8	0	0	0
	19-30	5-15	4.6-14	6.6-7.8	0	0	0
	30-40	5-15	4.6-22	6.6-7.8	0	0	0
	40-60	5-15	4.6-22	6.6-7.8	0	0	0
290:							
Perkins gravelly loam----------	0-8	13-26	6.0-20	6.6-7.8	0	0	0
	8-24	20-35	11-22	6.6-7.8	0	0	0
	24-38	17-35	8.0-17	6.6-7.8	0	0	0
	38-48	12-20	4.0-12	6.6-7.8	0	0	0
	48-73	10-20	2.0-7.0	6.6-7.8	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
300:							
Redsluff gravelly loam----------	0-2	16-24	20-30	6.1-7.8	0	0	0
	2-5	20-35	15-25	6.1-7.8	0	0	0
	5-12	20-35	15-25	6.1-7.8	0	0	0
	12-21	20-35	15-25	6.1-7.8	0	0	0
	21-29	20-35	15-25	6.1-7.8	0	0	0
	29-37	10-20	15-25	6.6-7.8	0	0	0
	37-42	10-20	15-25	6.6-7.8	0	0	0
	42-80	1-8	5.0-10	6.6-8.4	0	0	0
301:							
Wafap gravelly loam----------	0-1	16-26	20-35	6.4-7.0	0	0	
	1-5	22-35	20-30	6.5-7.2	0	0	
	5-13	30-45	20-30	6.6-8.0	0	0	0
	13-32	30-45	20-30	6.6-8.0	0	0	0
	32-39	30-45	20-30	6.6-8.0	0	0	0
	39-46	20-40	20-30	6.6-8.4	0	0	0
	46	---	---	---	0	0	
Hamslough clay----------	0-3	40-60	40-50	6.6-7.8	0	0	0
	3-14	40-60	40-50	6.6-7.8	0	0	0
	14-19	40-60	40-50	7.4-8.4	0-5	0	0
	19-27	30-60	30-50	7.9-8.5	0-15	0	0
	27	---	---	---	0	0	
302:							
Redtough loam----------	0-1	15-22	15-25	5.6-7.0	0	0	
	1-7	18-27	15-25	6.1-7.0	0	0	
	7-13	18-27	15-25	6.1-7.0	0	0	
	13	---	---	---	0	0	
Redswale cobbly loam----------	0-1	15-22	18-25	5.6-7.0	0	0	
	1-7	18-27	18-25	6.1-7.0	0	0	
	7	---	---	---	0	0	
303:							
Munjar gravelly loam----------	0-2	20-24	17-21	6.1-7.3	0	0	
	2-5	23-24	19-20	6.1-7.3	0	0	
	5-9	24-35	19-27	6.6-7.8	0	0	0
	9-16	24-35	19-27	6.6-7.8	0	0	0
	16-22	24-35	19-27	6.6-7.8	0	0	0
	22-31	35-40	23-30	6.6-7.8	0	0	0
	31-46	27-35	---	6.6-7.8	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
303:							
Tuscan taxadjunct gravelly clay loam--------	0-2	18-30	16-25	5.6-7.3	0	0	
	2-5	25-46	20-35	6.1-8.4	0	0	0
	5-13	35-46	27-35	6.6-8.4	0	0	0
	13-23	35-46	27-35	6.6-8.4	0	0	0
	23-29	35-46	23-34	6.6-8.4	0	0	0
	29	---	---	---	0	0	
Galt clay----------	0-3	40-60	26-46	6.1-7.8	0	0	0
	3-13	40-60	26-46	6.1-7.8	0	0	0
	13-29	40-60	15-34	6.6-7.8	0	0	0
	29-32	37-60	14-34	6.6-8.4	0-1	0	0
	32-39	---	---	---	0-1	0	0
304:							
Redtough loam----------	0-1	15-22	15-25	5.6-7.0	0	0	
	1-7	18-27	15-25	6.1-7.0	0	0	
	7-13	18-27	15-25	6.1-7.0	0	0	
	13	---	---	---	0	0	
305:							
Redtough gravelly loam----------	0-2	15-22	15-25	5.6-7.0	0	0	
	2-5	18-27	15-25	6.1-7.0	0	0	
	5-8	18-27	15-25	6.1-7.0	0	0	
	8-15	18-30	15-25	6.1-7.0	0	0	
	15	---	---	---	0	0	
Redswale loam----------	0-1	15-22	18-25	5.6-7.0	0	0	
	1-5	18-27	18-25	6.1-7.0	0	0	
	5	---	---	---	0	0	
Anita, gravelly duripan----------	0-3	40-60	40-50	6.3-8.0	0	0	0
	3-8	40-60	40-50	6.3-8.0	0	0	0
	8-15	40-60	40-50	6.3-8.0	0	0	0
	15	---	---	---	0-1	0	
306:							
Duric Xerarents, fill----------	0-8	18-27	9.5-20	6.0-7.0	0	0	
	8-14	18-35	9.5-25	7.0-8.0	0	0	0
	14-20	18-35	9.5-25	7.0-8.0	0	0	0
	20-36	10-27	5.7-20	5.5-8.0	0	0	0
	36-40	40-55	19-36	7.0-8.0	0	0	0
	40	---	---	---	---	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
306:							
Duric Xerarents, cut----------	0-13	10-30	5.7-21	6.0-7.0	0	0	
	13-15	12-50	6.6-33	6.5-8.0	0	0	
	15	---	---	---	---	0	
307:							
Duric Xerarents clay loam, leveled----------	0-2	18-40	9.5-28	5.1-7.0	0	0	
	2-12	30-55	15-36	7.0-8.0	0	0	0
	12	---	---	---	---	0	
310:							
Kimball loam----------	0-2	10-25	5.4-14	6.1-7.3	0	0	
	2-4	10-25	5.4-14	6.1-7.3	0	0	
	4-6	10-25	5.4-13	6.1-7.3	0	0	
	6-10	10-25	5.4-13	6.1-7.3	0	0	
	10-17	24-30	12-16	6.1-7.3	0	0	
	17-34	40-50	20-26	6.6-7.3	0	0	
	34-46	30-40	15-21	6.6-7.3	0	0	
	46-64	27-35	14-18	6.1-7.8	0	0	0
317:							
Thompsonflat loam----------	0-2	12-22	6.4-12	5.6-6.5	0	0	
	2-5	18-38	9.3-20	5.6-7.3	0	0	
	5-12	18-38	9.3-20	5.6-7.3	0	0	
	12-19	18-38	9.3-20	5.6-7.3	0	0	
	19-29	18-38	9.3-20	5.6-7.3	0	0	
	29-35	38-55	20-29	5.6-8.4	0	0	0
	35-43	5-38	2.6-20	6.6-8.4	0	0	0
	43-80	5-38	2.6-20	6.6-8.4	0	0	0
318:							
Thompsonflat fine sandy loam----------	0-3	12-22	6.4-12	5.6-6.5	0	0	
	3-7	18-38	9.3-20	5.6-7.3	0	0	
	7-11	18-38	9.3-20	5.6-7.3	0	0	
	11-15	18-38	9.3-20	5.6-7.3	0	0	
	15-22	38-55	20-29	5.6-8.4	0	0	
	22-35	5-38	2.6-20	6.1-8.4	0	0	
	35-45	5-38	2.6-20	6.1-8.4	0	0	
	45-53	5-38	2.6-20	6.1-8.4	0	0	0
	53-66	5-38	2.6-20	6.1-8.4	0	0	0
	66-80	5-38	2.6-20	6.1-8.4	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
318:							
Oroville gravelly fine sandy loam----------	0-2	15-24	8.0-13	5.6-6.5	0	0	
	2-6	18-25	9.4-13	5.6-7.3	0	0	
	6-13	22-35	11-18	5.6-7.3	0	0	
	13-17	45-52	23-27	5.6-7.3	0	0	
	17-23	45-52	22-27	5.6-7.3	0	0	
	23-31	---	---	---	0	0	
	31-60	---	---	---	0	0	
320:							
Vistarobles sandy loam----------	0-5	16-26	8.6-14	5.1-7.3	0	0	
	5-10	16-26	8.6-14	5.1-7.3	0	0	
	10-14	40-50	21-26	6.1-7.3	0	0	
	14-34	3-10	1.6-5.3	6.6-8.4	0	0	0
	34-40	3-15	1.6-7.9	6.6-8.4	0	0	0
Redding loam----------	0-4	12-26	6.5-14	5.6-7.3	0	0	
	4-11	12-26	6.3-14	5.6-7.3	0	0	
	11-24	15-26	7.8-14	5.6-7.3	0	0	
	24-35	40-50	21-26	6.1-7.3	0	0	
	35-40	---	---	---	0	0	
321:							
Durixeralfs, fine-loamy, gravelly fine sandy loam----------	0-1	12-15	8.9-13	5.8-6.3	0	0	
	1-5	15-30	11-24	5.8-6.5	0	0	
	5-10	15-30	11-23	5.8-6.5	0	0	
	10-18	15-30	11-23	5.8-6.5	0	0	
	18-24	28-35	19-27	6.0-6.5	0	0	
	24-27	35-50	23-36	6.5-7.0	0	0	
	27	---	---	---	---	0	
Durixeralfs, loamy-skeletal, gravelly fine sandy loam----------	0-1	10-26	7.6-21	5.5-6.0	0	0	
	1-4	18-30	13-24	5.8-6.5	0	0	
	4-9	28-38	19-29	6.0-6.5	0	0	
	9	---	---	---	---	0	
Typic Petraquepts silty clay----------	0-3	38-50	6.4-31	5.1-6.5	0	0	
	3-11	42-55	7.0-31	5.1-6.5	0	0	
	11	---	---	---	---	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
330:							
Wilsoncreek loam, occasionally flooded------	0-7	13-18	12-16	6.1-7.3	0	0	
	7-14	13-27	11-23	6.1-7.8	0	0	0
	14-25	13-27	11-23	6.1-7.8	0	0	0
	25-34	18-27	15-23	6.1-7.8	0	0	0
	34-44	18-27	15-22	6.6-7.8	0	0	0
	44-60	15-27	12-22	6.6-7.8	0	0	0
Trainer loam, occasionally flooded----------	0-7	18-27	10-20	6.1-7.3	0	0	
	7-13	18-27	10-20	6.1-7.3	0	0	
	13-26	18-27	10-15	6.1-7.3	0	0	
	26-36	18-27	10-15	6.1-7.3	0	0	
	36-46	10-18	5.0-10	6.1-7.3	0	0	
	46-61	10-18	5.0-10	6.1-7.3	0	0	
331:							
Thompsonflat loam---------------------------	0-2	12-22	6.4-12	5.6-6.5	0	0	
	2-5	18-38	9.3-20	5.6-7.3	0	0	
	5-12	18-38	9.3-20	5.6-7.3	0	0	
	12-19	18-38	9.3-20	5.6-7.3	0	0	
	19-29	18-38	9.3-20	5.6-7.3	0	0	
	29-35	38-55	20-29	5.6-8.4	0	0	0
	35-43	5-38	2.6-20	6.6-8.4	0	0	0
	43-80	5-38	2.6-20	6.6-8.4	0	0	0
335:							
Galt clay loam-------------------------------	0-6	30-40	20-32	6.1-7.8	0	0	0
	6-20	30-60	20-46	6.6-7.8	0	0	0
	20-27	40-60	15-34	6.6-7.8	0	0	0
	27-30	40-60	15-34	6.6-7.8	0	0	0
	30	---	---	---	0	0	0
336:							
Galt clay-----------------------------------	0-3	40-60	26-46	6.1-7.8	0	0	0
	3-13	40-60	26-46	6.1-7.8	0	0	0
	13-29	40-60	15-34	6.6-7.8	0	0	0
	29-32	37-60	14-34	6.6-8.4	0-2	0	0
	32-39	---	---	---	0-2	0	0
337:							
Galt clay loam-------------------------------	0-6	30-40	20-32	6.1-7.8	0	0	0
	6-20	30-60	20-46	6.6-7.8	0	0	0
	20-27	40-60	15-34	6.6-7.8	0	0	0
	27-30	40-60	15-34	6.6-7.8	0	0	0
	30	---	---	---	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
338:							
Oxyaquic Xerofluvents silt loam----------	0-6	15-20	12-17	5.6-7.4	0	0	0
	6-20	15-20	11-16	6.6-8.4	0	0	0
	20-32	5-10	4.1-8.6	6.6-8.4	0	0	0
	32-36	5-10	4.1-8.6	6.6-8.4	0	0	0
	36-46	5-5	4.1-4.6	6.6-8.4	0	0	0
	46-50	15-20	11-16	6.6-8.4	0	0	0
	50-55	5-10	4.1-8.6	6.6-8.4	0	0	0
	55-60	15-20	11-16	6.6-8.4	0	0	0
339:							
Oxyaquic Xerofluvents sandy loam, frequently flooded----------	0-8	10-17	8.6-15	5.6-7.3	0	0	
	8-12	5-17	4.1-14	6.6-8.4	0	0	0
	12-16	5-17	4.1-14	6.6-8.4	0	0	0
	16-60	5-17	4.1-14	6.6-8.4	0	0	0
340:							
Rock outcrop, Lovejoy basalt.							
Thermalrocks very gravelly loam----------	0-1	14-18	20-42	4.5-6.5	0	0	
	1-5	18-28	20-35	4.5-6.0	0	0	
	5	---	---	---	0	0	
Campbellhills gravelly loam----------	0-2	15-22	25-35	6.0-6.5	0	0	
	2-7	18-27	18-25	6.0-6.5	0	0	
	7-17	25-40	15-20	6.0-6.8	0	0	
	17-29	25-40	15-20	6.0-6.8	0	0	
	29-39	25-40	15-20	6.0-6.8	0	0	
	39-50	25-40	15-20	6.0-6.8	0	0	
	50	---	---	---	0	0	
341:							
Elsey loam----------	0-3	15-22	20-30	5.1-6.0	0	0	
	3-8	18-24	20-30	5.1-6.0	0	0	
	8-17	19-27	20-25	5.1-6.0	0	0	
	17-25	19-27	20-25	5.1-6.0	0	0	
	25-32	25-33	15-25	5.1-6.0	0	0	
	32-38	25-33	15-25	5.1-6.0	0	0	
	38	---	---	---	0	0	
Beatsonhollow gravelly loam----------	0-3	14-22	20-25	5.5-6.5	0	0	
	3-10	14-22	20-25	5.5-6.5	0	0	
	10-17	20-28	20-25	5.0-6.0	0	0	
	17	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
341:							
Campbellhills gravelly loam----------	0-2	15-22	25-35	6.0-6.5	0	0	
	2-7	18-27	18-25	6.0-6.5	0	0	
	7-17	25-40	15-20	6.0-6.8	0	0	
	17-29	25-40	15-20	6.0-6.8	0	0	
	29-39	25-40	15-20	6.0-6.8	0	0	
	39-50	25-40	15-20	6.0-6.8	0	0	
	50	---	---	---	0	0	
Rock outcrop, Lovejoy basalt.							
342:							
Thermalrocks very gravelly loam----------	0-1	14-18	20-42	4.5-6.5	0	0	
	1-5	18-28	20-35	4.5-6.0	0	0	
	5	---	---	---	0	0	
Beatsonhollow taxadjunct fine sandy loam----	0-1	15-18	14-16	6.0-6.3	0	0	
	1-6	18-27	15-23	5.5-6.5	0	0	
	6-10	18-27	15-23	5.5-6.5	0	0	
	10-15	18-27	15-23	5.5-6.5	0	0	
	15-18	18-27	15-23	5.5-6.5	0	0	
	18	---	---	5.5-6.5	0	0	
Rock outcrop, Lovejoy basalt.							
343:							
Coalcanyon very cobbly loam----------	0-2	14-18	30-45	6.1-7.3	0	0	
	2-11	16-22	25-35	6.1-7.3	0	0	
	11-27	22-35	20-30	5.6-7.3	0	0	
	27-43	22-35	20-30	5.6-7.3	0	0	
	43-65	22-35	20-30	5.6-7.3	0	0	
Coonhollow gravelly loam----------	0-3	16-22	30-45	5.5-7.3	0	0	
	3-11	18-22	25-35	5.6-7.3	0	0	
	11-22	18-38	20-30	6.1-7.3	0	0	
	22-32	18-38	20-30	6.1-7.3	0	0	
	32-45	18-38	20-30	6.1-7.3	0	0	
	45-50	---	---	---	0	0	
	50	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
344:							
Coalcanyon very cobbly loam----------	0-2	14-18	30-45	6.1-7.3	0	0	
	2-11	16-22	25-35	6.1-7.3	0	0	
	11-27	22-35	20-30	5.6-7.3	0	0	
	27-43	22-35	20-30	5.6-7.3	0	0	
	43-65	22-35	20-30	5.6-7.3	0	0	
Coonhollow gravelly loam----------	0-3	16-22	30-45	5.5-7.3	0	0	
	3-11	18-22	25-35	5.6-7.3	0	0	
	11-22	18-38	20-30	6.1-7.3	0	0	
	22-32	18-38	20-30	6.1-7.3	0	0	
	32-45	18-38	20-30	6.1-7.3	0	0	
	45-50	---	---	---	0	0	
	50	---	---	---	0	0	
Rock outcrop, Lovejoy basalt.							
346:							
Cherotable loam----------	0-2	18-24	25-35	4.5-6.5	0	0	
	2-8	18-35	15-25	5.1-6.5	0	0	
	8-14	18-35	15-25	5.1-6.5	0	0	
	14-21	18-35	15-25	5.1-6.5	0	0	
	21-30	18-35	15-25	5.1-6.5	0	0	
	30-45	35-50	15-20	5.1-6.0	0	0	
	45	---	---	---	0	0	
Elsey loam----------	0-3	15-22	20-30	5.1-6.0	0	0	
	3-8	18-24	20-30	5.1-6.0	0	0	
	8-17	19-27	20-25	5.1-6.0	0	0	
	17-25	19-27	20-25	5.1-6.0	0	0	
	25-32	25-33	15-25	5.1-6.0	0	0	
	32-38	25-33	15-25	5.1-6.0	0	0	
	38	---	---	---	0	0	
347:							
Haplic Palexeralfs loam----------	0-3	15-18	13-16	5.6-6.5	0	0	
	3-9	22-30	18-25	5.6-6.5	0	0	
	9-22	22-30	18-25	5.6-6.5	0	0	
	22-31	25-40	20-31	6.1-6.5	0	0	
	31-45	25-40	20-31	6.1-6.5	0	0	
	45-52	25-40	20-31	6.1-6.5	0	0	
	52-64	40-50	29-38	6.6-7.3	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
353:							
Cherokeespring gravelly silt loam----------	0-3	15-20	30-45	6.1-6.5	0	0	
	3-7	20-30	25-35	5.6-7.3	0	0	
	7-16	20-30	25-35	5.6-7.3	0	0	
	16-30	28-35	20-30	5.1-6.5	0	0	
	30-42	28-35	20-30	5.1-6.5	0	0	
	42-60	35-42	20-30	5.1-7.3	0	0	
	60-68	35-42	20-30	5.1-7.3	0	0	
355:							
Coalcanyon very cobbly loam----------	0-2	14-18	30-45	6.1-7.3	0	0	
	2-11	16-22	25-35	6.1-7.3	0	0	
	11-27	22-35	20-30	5.6-7.3	0	0	
	27-43	22-35	20-30	5.6-7.3	0	0	
	43-65	22-35	20-30	5.6-7.3	0	0	
Talus.							
356:							
Coalcanyon very cobbly loam----------	0-2	14-18	30-45	6.1-7.3	0	0	
	2-11	16-22	25-35	6.1-7.3	0	0	
	11-27	22-35	20-30	5.6-7.3	0	0	
	27-43	22-35	20-30	5.6-7.3	0	0	
	43-65	22-35	20-30	5.6-7.3	0	0	
Rock outcrop, basalt cliffs.							
Talus.							
Coonhollow gravelly loam----------	0-3	16-22	30-45	5.5-7.3	0	0	
	3-11	18-22	25-35	5.6-7.3	0	0	
	11-22	18-38	20-30	6.1-7.3	0	0	
	22-32	18-38	20-30	6.1-7.3	0	0	
	32-45	18-38	20-30	6.1-7.3	0	0	
	45-50	---	---	---	0	0	
	50	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
360:							
Typic Xerofluvents, coarse-loamy----------	0-3	6-18	3.6-12	4.0-7.5	0	0	
	3-11	1-32	0.8-19	5.8-7.5	0	0	
	11-20	1-32	0.8-19	6.5-8.0	0	0	
	20-24	1-32	0.8-19	6.5-8.0	0	0	
	24-31	1-32	0.8-19	6.5-8.0	0	0	
	31-45	1-32	0.8-19	6.5-8.0	0	0	
	45-51	1-32	0.8-19	6.5-8.0	0	0	
	51-66	1-32	0.8-19	6.5-8.0	0	0	
	66-84	1-32	0.8-19	6.5-8.0	0	0	
	84-95	1-32	0.8-19	6.5-8.0	0	0	
Typic Xerofluvents, sandy-skeletal----------	0-3	5-18	3.1-12	6.5-7.0	0	0	
	3-9	1-18	0.8-11	6.5-7.0	0	0	
	9-16	1-5	0.8-3.7	6.5-7.0	0	0	
	16-22	1-5	0.8-3.7	6.5-7.0	0	0	
	22-30	1-5	0.8-3.7	6.5-7.0	0	0	
	30-40	1-5	0.8-3.7	6.5-7.0	0	0	
	40-50	1-5	0.8-3.7	6.5-7.0	0	0	
	50-98	1-5	0.8-3.7	6.5-7.0	0	0	
361:							
Typic Xerofluvents, sandy-skeletal----------	0-3	5-18	3.1-12	6.5-7.0	0	0	
	3-9	1-18	0.8-12	6.5-7.0	0	0	
	9-16	1-5	0.8-3.7	6.5-7.0	0	0	
	16-22	1-5	0.8-3.7	6.5-7.0	0	0	
	22-30	1-5	0.8-3.7	6.5-7.0	0	0	
	30-40	1-5	0.8-3.7	6.5-7.0	0	0	
	40-50	1-5	0.8-3.7	6.5-7.0	0	0	
	50-98	1-5	0.8-3.7	6.5-7.0	0	0	
362:							
Ultic Haploxeralfs, sandstone, low elevation, very deep----------	0-2	14-20	12-18	6.1-7.3	0	0	
	2-8	20-35	16-27	5.6-6.5	0	0	
	8-18	20-35	16-27	5.6-6.5	0	0	
	18-28	25-40	19-30	5.6-6.5	0	0	
	28-39	25-40	19-30	5.6-6.5	0	0	
	39-49	25-35	19-26	5.6-6.5	0	0	
	49-56	12-22	9.6-17	5.6-6.5	0	0	
	56-70	12-22	9.6-17	5.6-6.5	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
362:							
Ultic Haploxeralfs, sandstone, low elevation, deep	0-3	14-20	12-18	6.1-7.3	0	0	
	3-8	20-30	16-24	5.6-6.5	0	0	
	8-15	20-30	16-24	5.6-6.5	0	0	
	15-24	10-30	8.1-23	5.6-6.5	0	0	
	24-32	10-30	8.1-23	5.6-6.5	0	0	
	32-41	10-30	8.1-23	5.6-6.5	0	0	
	41	---	---	---	0	0	
363:							
Ultic Haploxeralfs, sandstone, low elevation, very deep	0-2	14-20	12-18	6.1-7.3	0	0	
	2-8	20-35	16-27	5.6-6.5	0	0	
	8-18	20-35	16-27	5.6-6.5	0	0	
	18-28	25-40	19-30	5.6-6.5	0	0	
	28-39	25-40	19-30	5.6-6.5	0	0	
	39-49	25-35	19-26	5.6-6.5	0	0	
	49-56	12-22	9.6-17	5.6-6.5	0	0	
	56-70	12-22	9.6-17	5.6-6.5	0	0	
Ultic Haploxeralfs, sandstone, low elevation, deep	0-3	14-20	12-18	6.1-7.3	0	0	
	3-8	20-30	16-24	5.6-6.5	0	0	
	8-15	20-30	16-24	5.6-6.5	0	0	
	15-24	10-30	8.1-23	5.6-6.5	0	0	
	24-32	10-30	8.1-23	5.6-6.5	0	0	
	32-41	10-30	8.1-23	5.6-6.5	0	0	
	41	---	---	---	0	0	
364:							
Ultic Haploxeralfs, sandstone, low elevation, deep	0-3	14-20	12-18	6.1-7.3	0	0	
	3-8	20-30	16-24	5.6-6.5	0	0	
	8-15	20-30	16-24	5.6-6.5	0	0	
	15-24	10-30	8.1-23	5.6-6.5	0	0	
	24-32	10-30	8.1-23	5.6-6.5	0	0	
	32-41	10-30	8.1-23	5.6-6.5	0	0	
	41	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
364:							
Ultic Haploxeralfs, sandstone, low elevation, very deep	0-2	14-20	12-18	6.1-7.3	0	0	
	2-8	20-35	16-27	5.6-6.5	0	0	
	8-18	20-35	16-27	5.6-6.5	0	0	
	18-28	25-40	19-30	5.6-6.5	0	0	
	28-39	25-40	19-30	5.6-6.5	0	0	
	39-49	25-35	19-26	5.6-6.5	0	0	
	49-56	12-22	9.6-17	5.6-6.5	0	0	
	56-70	12-22	9.6-17	5.6-6.5	0	0	
365:							
Palexerults gravelly loam	0-2	16-24	5.0-10	5.6-7.3	0	0	
	2-12	20-35	5.0-10	4.5-6.5	0	0	
	12-20	20-35	---	4.5-6.5	0	0	
	20-29	35-60	---	4.3-5.5	0	0	
	29-46	30-60	---	4.3-5.5	0	0	
	46-65	40-60	---	4.3-5.5	0	0	
	65	---	---	---	0	0	
366:							
Palexerults gravelly loam	0-2	16-24	5.0-10	5.6-7.3	0	0	
	2-12	20-35	5.0-10	4.5-6.5	0	0	
	12-20	20-35	---	4.5-6.5	0	0	
	20-29	35-60	---	4.3-5.5	0	0	
	29-46	30-60	---	4.3-5.5	0	0	
	46-65	40-60	---	4.3-5.5	0	0	
	65	---	---	---	0	0	
370:							
Palexerults gravelly loam	0-2	16-24	5.0-10	5.6-7.3	0	0	
	2-12	20-35	5.0-10	4.5-6.5	0	0	
	12-20	20-35	---	4.5-6.5	0	0	
	20-29	35-60	---	4.3-5.5	0	0	
	29-46	30-60	---	4.3-5.5	0	0	
	46-65	40-60	---	4.3-5.5	0	0	
	65	---	---	---	0	0	
375:							
Wickscorner loam	0-2	15-20	25-30	5.6-6.5	0	0	
	2-8	20-33	15-25	4.5-6.0	0	0	
	8-22	20-33	15-25	4.5-6.0	0	0	
	22-38	28-45	15-25	5.1-7.3	0	0	
	38-59	28-45	15-25	5.1-7.3	0	0	
	59-72	35-55	15-25	5.1-7.3	0	0	
	72-84	35-55	15-25	5.1-7.3	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
376:							
Flagcanyon gravelly loam----------	0-3	15-22	25-35	5.1-6.5	0	0	
	3-9	22-30	15-25	5.1-7.3	0	0	
	9-14	22-30	15-25	5.1-7.3	0	0	
	14-30	30-50	12-20	5.6-7.3	0	0	
	30-53	22-50	12-20	6.6-8.4	0	0	
	53-65	22-50	12-20	6.6-8.4	0	0	
Wickscorner loam----------	0-2	15-20	25-30	5.6-6.5	0	0	
	2-8	20-33	15-25	4.5-6.0	0	0	
	8-22	20-33	15-25	4.5-6.0	0	0	
	22-38	28-45	15-25	5.1-7.3	0	0	
	38-59	28-45	15-25	5.1-7.3	0	0	
	59-72	35-55	15-25	5.1-7.3	0	0	
	72-84	35-55	15-25	5.1-7.3	0	0	
377:							
Flagcanyon taxadjunct fine sandy loam-------	0-3	15-18	12-15	5.6-6.0	0	0	
	3-7	24-32	19-25	5.1-6.5	0	0	
	7-16	24-32	18-25	5.1-6.5	0	0	
	16-23	35-50	25-37	5.6-7.3	0	0	
	23-31	35-50	25-37	5.6-7.3	0	0	
	31-63	2-5	1.8-4.5	6.1-7.3	0	0	
Durixeralfs, clayey-skeletal, loam----------	0-1	18-25	3.4-17	6.0-6.5	0	0	
	1-4	24-30	4.3-19	6.0-6.5	0	0	
	4-9	40-50	6.7-26	7.0-7.3	0	0	
	9-15	40-50	6.7-25	7.0-7.3	0	0	
	15-60	5-50	1.1-18	7.0-7.8	0	0	0
Duraquerts gravelly clay----------	0-3	40-50	26-39	6.0-6.5	0	0	
	3-6	40-50	15-29	6.0-6.5	0	0	
	6-15	45-55	17-27	6.5-8.0	0	0	0
	15-21	45-55	17-23	6.5-8.0	0	0	0
	21-23	50-55	15-20	7.0-8.0	0	0	0
	23-60	5-10	2.0-4.6	7.0-8.0	0	0	0
400:							
Subaco taxadjunct clay----------	0-8	45-55	28-48	7.4-8.4	0	0	0
	8-16	50-60	31-52	7.4-9.0	0-2	0	0
	16-29	50-60	31-52	7.9-9.0	1-5	0	0
	29-35	35-60	6.0-36	8.5-11.0	15-20	0	0
	35-42	---	---	7.4-9.0	0-3	0	0
	40-60	---	---	---	0-3	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
415:							
Ignord fine sandy loam----------	0-4	8-20	7.3-18	7.4-8.4	1-4	0	0
	4-14	8-15	7.3-13	7.4-8.4	1-4	0	0
	14-25	8-15	7.3-13	7.4-8.4	1-4	0	0
	25-32	8-15	7.3-13	7.4-8.4	1-4	0	0
	32-53	8-15	6.6-13	7.4-8.4	1-4	0	0
	53-58	8-15	6.6-13	7.4-8.4	1-4	0	0
	58-77	8-15	6.6-13	7.4-8.4	1-4	0	0
416:							
Calcic Haploxerolls sandy loam----------	0-5	15-23	5.0-15	6.8-8.5	0-1	0	4
	5-17	15-25	5.0-15	7.8-8.5	1-5	0	4
	17-20	12-27	5.0-15	7.8-8.5	1-5	0	4
	20-33	12-27	5.0-15	7.8-8.5	1-5	0	4
	33-44	12-20	5.0-15	8.0-8.6	0-5	0	4
	44-72	---	---	---	0-5	0	4
418:							
Almendra loam----------	0-4	15-27	25-30	5.6-7.8	0-1	0	0
	4-14	15-27	25-30	5.6-7.8	0-1	0	0
	14-29	17-27	20-30	6.1-7.8	0-1	0	0
	29-40	17-27	20-30	6.1-7.8	0-1	0	0
	40-52	15-27	20-25	6.1-7.8	0-2	0	0
	52-74	12-25	15-25	6.1-7.8	0-2	0	0
	74-86	12-25	15-25	6.1-7.8	0-2	0	0
419:							
Conejo fine sandy loam, overwash----------	0-17	10-20	8.9-17	6.1-7.8	0	0	
	17-35	18-35	16-29	6.1-7.8	0-1	0	0
	35-45	18-35	15-28	6.1-7.8	0-1	0	0
	45-56	18-35	15-28	6.1-7.8	0-2	0	0
	56-62	15-35	12-27	6.6-8.4	0-2	0	0
	62-70	15-35	12-27	6.6-8.4	0-2	0	0
	70-72	15-35	12-27	6.6-8.4	0-2	0	0
420:							
Conejo clay loam----------	0-5	27-35	23-29	6.1-7.8	0-1	0	0
	5-19	27-35	22-29	6.1-7.8	0-1	0	0
	19-30	27-35	22-29	6.1-7.8	0-1	0	0
	30-48	27-35	21-28	6.1-7.8	0-2	0	0
	48-70	15-35	12-27	6.6-8.4	0-2	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
425:							
Vina fine sandy loam----------	0-3	12-20	11-18	6.1-8.4	0-1	0	0
	3-11	12-20	11-18	6.1-8.4	0-1	0	0
	11-23	10-18	8.9-16	6.1-8.4	0-1	0	0
	23-37	10-18	8.9-16	6.1-8.4	0-1	0	0
	37-50	1-15	1.0-13	6.6-8.4	0-2	0	0
	50-54	1-15	1.0-13	6.6-8.4	0-2	0	0
	54-80	1-15	1.0-13	6.6-8.4	0-2	0	0
426:							
Vina loam----------	0-4	12-20	11-18	6.1-8.4	0-1	0	0
	4-15	5-18	4.9-16	6.1-8.4	0-1	0	0
	15-28	5-18	4.8-16	6.1-8.4	0-1	0	0
	28-44	5-18	4.8-16	6.6-8.4	0-2	0	0
	44-63	5-18	4.6-16	6.6-8.4	0-2	0	0
	63-72	5-18	4.3-15	6.6-8.4	0-2	0	0
439:							
Oxyaquic Xerofluvents clay----------	0-10	40-60	30-46	5.6-8.4	0	0	0
	10-13	40-60	31-46	6.6-8.4	0	0	0
	13-21	40-60	31-46	6.6-8.4	0	0	0
	21-27	5-15	4.1-12	6.6-8.4	0	0	0
	27-32	40-60	26-43	6.6-8.4	0	0	0
	32-37	35-40	23-30	6.6-8.4	0	0	0
	37-55	60-80	38-58	7.4-8.4	0	0	0
	55-63	60-80	38-56	7.4-8.4	0	0	0
	63-65	---	---	---	---	0	0
	65-80	40-60	26-43	7.4-8.4	0	0	0
440:							
Oxyaquic Xerofluvents silt loam, frequently flooded----------	0-9	5-27	4.6-22	5.6-8.4	0	0	0
	9-18	5-10	4.8-9.1	6.6-8.4	0	0	0
	18-25	10-27	8.9-22	6.6-8.4	0	0	0
	25-33	5-27	4.1-21	6.6-8.4	0	0	0
	33-44	15-30	11-23	6.6-8.4	0	0	0
	44-51	15-30	11-23	6.6-8.4	0	0	0
	51-60	40-70	26-51	7.4-8.4	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
441:							
Oxyaquic Xerofluvents very fine sandy loam--	0-6	15-20	12-17	5.6-7.4	0	0	0
	6-20	18-27	15-22	6.6-7.4	0	0	0
	20-30	18-27	15-22	6.6-7.4	0	0	0
	30-43	5-15	4.1-12	6.6-7.4	0	0	0
	43-55	18-27	13-21	6.6-7.4	0	0	0
	55-72	5-20	4.1-16	6.6-7.4	0	0	0
	72-75	40-60	26-45	7.4-8.4	0	0	0
442:							
Durixerolls clay loam----------	0-6	27-40	22-33	6.5-7.3	0	0	
	6-12	27-40	22-32	6.6-8.0	0	0	0
	12-24	25-35	20-27	6.6-8.0	0	0	0
	24-33	17-35	13-27	6.6-8.0	0	0	0
	33	---	---	---	---	0	
Haploxerolls clay loam----------	0-5	27-35	23-29	6.6-7.8	0	0	0
	5-18	27-35	23-29	6.6-7.8	0	0	0
	18-29	25-35	20-28	6.6-7.8	0	0	0
	29-44	20-35	17-28	6.6-8.0	0	0	0
	44-57	10-35	8.1-27	6.6-8.0	0	0	0
	57	---	---	---	0	0	0
443:							
Durixerolls loam----------	0-4	18-25	15-21	6.0-7.3	0	0	
	4-10	17-25	14-21	6.6-7.3	0	0	
	10-17	18-25	15-20	6.6-7.3	0	0	
	17-23	18-30	15-24	6.6-7.3	0	0	
	23-26	18-30	14-24	6.6-7.3	0	0	
	26	---	---	---	---	0	
Haploxerolls loam----------	0-5	20-27	17-23	6.0-7.3	0	0	
	5-16	20-27	17-23	6.6-7.3	0	0	
	16-27	18-27	15-23	6.6-7.3	0	0	
	27-40	18-27	15-23	6.6-8.0	0	0	0
	40-48	9-27	8.1-23	6.6-8.0	0	0	0
	48-52	9-27	7.4-22	6.6-8.0	0	0	0
	52	---	---	---	0	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
445:							
Chico loam----------	0-5	20-27	17-24	6.1-7.8	0	0	0
	5-10	25-35	20-29	6.4-7.8	0	0	0
	10-21	25-35	20-29	6.4-7.8	0	0	0
	21-32	25-35	20-28	6.4-7.8	0	0	0
	32-50	18-35	14-27	6.6-7.8	0-1	0	0
	50-70	18-35	14-27	6.6-7.8	0-1	0	0
	70-80	18-35	14-27	6.6-7.8	0-1	0	0
447:							
Charger fine sandy loam----------	0-3	8-17	20-30	5.6-7.3	0	0	
	3-7	8-17	20-30	6.1-8.4	0	0	0
	7-15	8-17	20-30	6.1-8.4	0	0	0
	15-32	8-17	15-25	6.6-8.4	0	0	0
	32-42	8-17	15-25	6.6-8.4	0	0	0
	42-53	8-17	15-25	6.6-8.4	0	0	0
	53-63	8-17	15-25	6.6-8.4	0	0	0
	63-80	1-10	5.0-20	6.6-8.4	0	0	0
448:							
Haploxerolls clay loam----------	0-5	27-35	23-29	6.0-7.3	0	0	
	5-10	27-35	23-29	6.0-7.3	0	0	
	10-24	27-35	22-28	6.6-7.8	0-2	0	0
	24-39	27-35	22-28	6.6-7.8	0-2	0	0
	39-66	18-35	14-27	6.6-7.8	0-2	0	0
449:							
Haploxerolls loam----------	0-4	18-27	16-23	5.5-7.3	0	0	
	4-10	18-27	16-23	5.5-7.3	0	0	
	10-24	18-27	15-23	6.6-7.8	0	0	0
	24-36	18-27	15-23	6.6-7.8	0	0	0
	36-52	18-27	15-22	6.6-7.8	0	0	0
	52-60	10-27	8.1-22	6.6-7.8	0	0	0
500:							
Lofgren clay----------	0-5	60-70	36-50	5.1-6.5	0	0	0
	5-12	60-70	36-52	6.1-8.4	0	0	0
	12-29	60-70	29-53	6.1-8.4	0	0	0
	29-38	60-70	29-51	7.4-8.4	0-2	0	0
	38-44	60-70	29-47	7.9-8.4	0-2	0	0
	44-47	27-40	8.5-41	7.9-8.5	5-14	0	0
	47-62	---	---	---	5-14	0	0
	62-82	---	---	---	1-5	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
500:							
Blavo clay----------	0-5	60-70	36-60	5.6-7.3	0	0	0
	5-16	60-70	36-52	7.4-8.4	0	0	0
	16-24	60-70	29-53	7.4-8.4	0	0	0
	24-30	60-70	29-51	7.4-8.4	0-2	0	0
	30-36	35-60	11-41	7.9-9.0	5-11	0	0
	36-60	---	---	---	5-11	0	0
501:							
Lofgren clay, occasionally flooded----------	0-5	60-70	36-60	5.1-6.5	0	0	0
	5-12	60-70	36-52	6.1-8.4	0	0	0
	12-22	60-70	29-53	6.1-8.4	0	0	0
	22-30	60-70	29-51	7.4-8.4	0-2	0	0
	30-41	60-70	29-47	7.9-8.4	0-2	0	0
	41-45	27-40	8.5-41	7.9-8.5	5-14	0	0
	45-60	---	---	---	5-14	0	0
Blavo clay, occasionally flooded----------	0-6	60-70	36-60	5.6-7.3	0	0	0
	6-10	60-70	36-52	7.4-8.4	0	0	0
	10-22	60-70	29-53	7.4-8.4	0	0	0
	22-29	60-70	29-51	7.4-8.4	0-2	0	0
	29-36	35-60	11-41	7.9-9.0	5-11	0	0
	36-42	---	---	---	5-11	0	0
502:							
Blavo silt loam, overwash, occasionally flooded----------	0-7	18-27	13-40	5.6-7.3	0	0	0
	7-14	60-70	36-52	6.6-8.4	0	0	0
	14-22	60-70	29-50	7.4-8.4	0	0	0
	22-29	60-70	29-53	7.4-8.4	0	0	0
	29-36	60-70	17-41	7.9-9.0	0-2	0	0
	36-50	---	---	---	0-2	0	0
519:							
Edjobe silty clay----------	0-8	40-55	26-48	6.1-7.8	0-2	0	0
	8-25	40-55	20-39	6.6-8.4	0-2	0	0
	25-32	40-50	15-31	7.4-8.4	1-15	0	0
	32-48	27-40	8.5-22	7.4-8.4	1-15	0	0
	48-60	25-40	8.0-20	7.4-8.4	1-15	0	0
	60-69	25-35	8.0-15	7.4-8.4	1-15	0	0
	69-75	---	---	7.9-8.4	1-15	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
520:							
Esquon clay----------	0-5	40-60	---	4.5-7.3	0-1	0	0
	5-11	40-60	20-36	6.1-8.4	0-1	0	0
	11-22	40-60	19-36	6.6-8.4	0-1	0	0
	22-35	40-60	19-36	6.6-8.4	0-1	0	0
	35-46	40-60	12-31	7.4-8.4	0-2	0	0
	46-50	40-60	12-33	7.4-8.4	0-2	0	0
	50-56	25-60	8.0-34	7.4-8.4	0-2	0	0
	56-67	---	---	7.9-8.4	5-14	0	0
Neerdobe clay----------	0-5	40-60	26-49	5.6-7.3	0-1	0	0
	5-15	40-60	20-44	7.4-8.4	0-1	0	0
	15-23	40-60	20-44	7.4-8.4	0-1	0	0
	23-28	40-60	20-43	7.4-8.4	0-2	0	0
	28-33	35-60	11-41	7.9-9.0	5-14	0	0
	33-38	18-27	6.0-36	7.9-9.0	5-14	0	0
	38-56	18-27	3.4-38	7.9-9.0	5-14	0	0
521:							
Neerdobe silt loam, overwash----------	0-7	2-25	1.9-21	5.6-7.3	0	0	0
	7-16	2-25	1.5-17	7.4-8.4	0	0	0
	16-20	2-10	0.9-6.2	7.4-8.4	0	0	0
	20-33	40-60	26-45	7.4-8.4	0-1	0	0
	33-47	40-60	20-43	7.4-8.4	0-2	0	0
	47-52	---	---	7.9-9.0	5-14	0	0
	52-60	---	---	7.9-9.0	5-14	0	0
522:							
Clear Lake silty clay loam, overwash--------	0-6	35-40	23-32	6.6-8.4	0-1	0	0
	6-12	40-60	26-49	7.4-8.4	0-2	0	0
	12-35	40-60	20-36	7.9-9.0	0-2	0	0
	35-50	40-60	19-36	7.9-9.0	0-2	0	0
	50-60	35-60	11-29	7.9-9.0	0-2	0	0
	60-70	35-60	11-29	7.9-9.0	0-2	0	0
	70-72	35-60	11-29	7.9-9.0	0-2	0	0
523:							
Esquon silty clay loam, overwash----------	0-10	35-40	23-32	6.1-7.9	0-1	0	0
	10-18	40-60	26-49	7.4-8.4	0-2	0	0
	18-46	40-60	12-29	7.4-8.4	0-2	0	0
	46-60	---	---	---	5-14	0	0

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
525:							
Govstanford loam----------	0-3	15-27	11-23	6.1-7.8	0	0	0
	3-11	15-27	11-23	6.1-7.8	0	0	0
	11-18	3-18	1.3-12	6.6-8.4	0	0	0
	18-25	3-18	1.3-12	6.6-8.4	0	0	0
	25-34	5-18	2.0-10	6.6-8.4	0	0	0
	34-42	40-60	26-52	6.6-8.4	0	0	0
	42-61	40-60	20-42	6.6-8.4	0	0	0
	61-72	35-55	13-34	6.6-8.4	0	0	0
526:							
Govstanford loam, occasionally flooded------	0-3	15-27	11-23	6.1-7.8	0	0	0
	3-11	15-27	11-23	6.1-7.8	0	0	0
	11-18	3-18	1.3-12	6.6-8.4	0	0	0
	18-25	3-18	1.3-12	6.6-8.4	0	0	0
	25-34	5-18	2.0-10	6.6-8.4	0	0	0
	34-42	40-60	26-52	6.6-8.4	0	0	0
	42-61	40-60	20-42	6.6-8.4	0	0	0
	61-72	35-55	13-34	6.6-8.4	0	0	0
528:							
Neerdobe clay loam----------	0-10	35-40	23-45	5.6-7.3	0-1	0	0
	10-18	40-60	20-44	7.4-8.4	0-1	0	0
	18-25	40-60	12-43	7.4-8.4	0-1	0	0
	25	---	---	---	0-1	0	0
550:							
Dunstone loam, dry----------	0-2	12-20	16-29	5.0-6.5	0	0	
	2-7	16-22	9.0-18	6.0-6.6	0	0	
	7-10	16-24	11-19	6.0-6.7	0	0	
	10-16	23-32	11-18	5.8-6.8	0	0	
	16	---	0.0-0.0	---	0	0	
Loafercreek silt loam, dry----------	0-2	14-22	16-33	5.5-7.0	0	0	
	2-4	15-24	8.0-22	5.5-7.0	0	0	
	4-11	15-24	8.0-22	5.8-6.7	0	0	
	11-20	18-30	8.0-21	6.0-6.8	0	0	
	20-29	18-30	8.0-25	6.0-7.0	0	0	
	29	---	0.0-0.0	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
551:							
Dunstone loam, dry	0-2	12-20	16-29	5.0-6.5	0	0	
	2-7	16-22	9.0-18	6.0-6.6	0	0	
	7-10	16-24	11-19	6.0-6.7	0	0	
	10-16	23-32	11-18	5.8-6.8	0	0	
	16	---	0.0-0.0	---	0	0	
Lomarica loam	0-1	15-20	14-18	6.0-6.6	0	0	
	1-5	18-23	15-20	6.1-6.6	0	0	
	5-9	29-38	23-30	6.1-6.5	0	0	
	9-12	32-44	25-35	6.0-6.5	0	0	
	12-25	35-45	27-35	6.1-7.3	0	0	
	25-32	45-55	34-41	6.6-7.3	0	0	
	32	---	---	---	0	0	
Argonaut taxadjunct loam	0-2	18-30	9.8-16	5.9-7.0	0	0	
	2-8	28-40	15-22	6.0-6.7	0	0	
	8-14	40-50	21-27	6.0-6.9	0	0	
	14-20	40-50	21-27	6.0-6.9	0	0	
	20-26	36-45	18-24	6.1-7.0	0	0	
	26-30	36-45	18-24	6.1-7.0	0	0	
	30	---	---	---	0	0	
552:							
Dunstone gravelly loam	0-4	12-20	16-29	6.0-6.5	0	0	
	4-6	14-22	9.0-18	6.0-6.5	0	0	
	6-10	15-27	11-18	5.8-7.0	0	0	
	10-15	18-35	11-18	5.8-7.0	0	0	
	15-37	---	---	---	0	0	
	37	---	---	---	0	0	
Loafercreek gravelly loam	0-0.5	---	---	---	0	0	
	0.5-2	14-22	20-25	6.0-6.3	0	0	
	2-6	15-24	15-25	6.0-6.3	0	0	
	6-12	18-30	15-25	6.0-6.5	0	0	
	12-23	20-30	20-25	6.0-6.5	0	0	
	23-31	20-30	20-30	6.0-6.5	0	0	
	31-42	---	0.0-0.0	---	0	0	
	42	---	0.0-0.0	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
553:							
Dunstone gravelly loam----------	0-4	12-20	16-29	6.0-6.5	0	0	
	4-6	14-22	9.0-18	6.0-6.5	0	0	
	6-10	15-27	11-18	5.8-7.0	0	0	
	10-15	18-35	11-18	5.8-7.0	0	0	
	15-37	---	---	---	0	0	
	37	---	---	---	0	0	
Loafercreek gravelly loam----------	0-0.5	---	---	---	0	0	
	0.5-2	14-22	20-25	6.0-6.3	0	0	
	2-6	15-24	15-25	6.0-6.3	0	0	
	6-12	18-30	15-25	6.0-6.5	0	0	
	12-23	20-30	20-25	6.0-6.5	0	0	
	23-31	20-30	20-30	6.0-6.5	0	0	
	31-42	---	0.0-0.0	---	0	0	
	42	---	0.0-0.0	---	0	0	
554:							
Dunstone gravelly loam----------	0-4	12-20	16-29	6.0-6.5	0	0	
	4-6	14-22	9.0-18	6.0-6.5	0	0	
	6-10	15-27	11-18	5.8-7.0	0	0	
	10-15	18-35	11-18	5.8-7.0	0	0	
	15-37	---	---	---	0	0	
	37	---	---	---	0	0	
Loafercreek gravelly loam----------	0-0.5	---	---	---	0	0	
	0.5-2	14-22	20-25	6.0-6.3	0	0	
	2-6	15-24	15-25	6.0-6.3	0	0	
	6-12	18-30	15-25	6.0-6.5	0	0	
	12-23	20-30	20-25	6.0-6.5	0	0	
	23-31	20-30	20-30	6.0-6.5	0	0	
	31-42	---	0.0-0.0	---	0	0	
	42	---	0.0-0.0	---	0	0	
555:							
Dunstone gravelly loam----------	0-4	12-20	16-29	6.0-6.5	0	0	
	4-6	14-22	9.0-18	6.0-6.5	0	0	
	6-10	15-27	11-18	5.8-7.0	0	0	
	10-15	18-35	11-18	5.8-7.0	0	0	
	15-37	---	---	---	0	0	
	37	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
555:							
Loafercreek gravelly loam----------	0-0.5	---	---	---	0	0	
	0.5-2	14-22	20-25	6.0-6.3	0	0	
	2-6	15-24	15-25	6.0-6.3	0	0	
	6-12	18-30	15-25	6.0-6.5	0	0	
	12-23	20-30	20-25	6.0-6.5	0	0	
	23-31	20-30	20-30	6.0-6.5	0	0	
	31-42	---	0.0-0.0	---	0	0	
	42	---	0.0-0.0	---	0	0	
556:							
Mounthope loam----------	0-1	---	---	---	0	0	
	1-3	17-25	14-21	5.6-7.3	0	0	
	3-7	20-27	17-23	5.6-6.5	0	0	
	7-15	20-27	17-24	5.6-6.5	0	0	
	15-22	27-35	22-28	5.6-6.5	0	0	
	22-26	27-35	21-29	5.6-6.5	0	0	
	26-31	27-35	21-32	5.6-6.5	0	0	
	31-42	27-35	20-32	5.6-6.5	0	0	
	42-52	20-35	13-28	5.6-6.5	0	0	
	52	---	---	---	0	0	
Hartsmill gravelly loam----------	0-1	---	---	---	0	0	
	1-3	14-18	12-16	5.6-6.5	0	0	
	3-6	17-30	14-25	5.6-7.3	0	0	
	6-13	17-30	14-25	5.6-7.3	0	0	
	13-24	17-30	14-24	5.6-7.3	0	0	
	24-35	28-40	22-31	5.6-6.5	0	0	
	35-62	28-40	21-31	5.6-6.5	0	0	
	62	---	---	---	0	0	
557:							
Mounthope loam----------	0-1	---	---	---	0	0	
	1-3	17-25	14-21	5.6-7.3	0	0	
	3-7	20-27	17-23	5.6-6.5	0	0	
	7-15	20-27	17-24	5.6-6.5	0	0	
	15-22	27-35	22-28	5.6-6.5	0	0	
	22-26	27-35	21-29	5.6-6.5	0	0	
	26-31	27-35	21-32	5.6-6.5	0	0	
	31-42	27-35	20-32	5.6-6.5	0	0	
	42-52	20-35	13-28	5.6-6.5	0	0	
	52	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
557:							
Hartsmill gravelly loam	0-1	---	---	---	0	0	
	1-3	14-18	12-16	5.6-6.5	0	0	
	3-6	17-30	14-25	5.6-7.3	0	0	
	6-13	17-30	14-25	5.6-7.3	0	0	
	13-24	17-30	14-24	5.6-7.3	0	0	
	24-35	28-40	22-31	5.6-6.5	0	0	
	35-62	28-40	21-31	5.6-6.5	0	0	
	62	---	---	---	0	0	
558:							
Hartsmill gravelly loam	0-1	---	---	---	0	0	
	1-3	14-18	12-16	5.6-6.5	0	0	
	3-6	17-30	14-25	5.6-7.3	0	0	
	6-13	17-30	14-25	5.6-7.3	0	0	
	13-24	17-30	14-24	5.6-7.3	0	0	
	24-35	28-40	22-31	5.6-6.5	0	0	
	35-62	28-40	21-31	5.6-6.5	0	0	
	62	---	---	---	0	0	
Mounthope loam	0-1	---	---	---	0	0	
	1-3	17-25	14-21	5.6-7.3	0	0	
	3-7	20-27	17-23	5.6-6.5	0	0	
	7-15	20-27	17-24	5.6-6.5	0	0	
	15-22	27-35	22-28	5.6-6.5	0	0	
	22-26	27-35	21-29	5.6-6.5	0	0	
	26-31	27-35	21-32	5.6-6.5	0	0	
	31-42	27-35	20-32	5.6-6.5	0	0	
	42-52	20-35	13-28	5.6-6.5	0	0	
	52	---	---	---	0	0	
559:							
Hartsmill gravelly loam	0-1	---	---	---	0	0	
	1-3	14-18	12-16	5.6-6.5	0	0	
	3-6	17-30	14-25	5.6-7.3	0	0	
	6-13	17-30	14-25	5.6-7.3	0	0	
	13-24	17-30	14-24	5.6-7.3	0	0	
	24-35	28-40	22-31	5.6-6.5	0	0	
	35-62	28-40	21-31	5.6-6.5	0	0	
	62	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
559:							
Mounthope loam	0-1	---	---	---	0	0	
	1-3	17-25	14-21	5.6-7.3	0	0	
	3-7	20-27	17-23	5.6-6.5	0	0	
	7-15	20-27	17-24	5.6-6.5	0	0	
	15-22	27-35	22-28	5.6-6.5	0	0	
	22-26	27-35	21-29	5.6-6.5	0	0	
	26-31	27-35	21-32	5.6-6.5	0	0	
	31-42	27-35	20-32	5.6-6.5	0	0	
	42-52	20-35	13-28	5.6-6.5	0	0	
	52	---	---	---	0	0	
560:							
Hartsmill gravelly loam	0-1	---	---	---	0	0	
	1-3	14-18	12-16	5.6-6.5	0	0	
	3-6	17-30	14-25	5.6-7.3	0	0	
	6-13	17-30	14-25	5.6-7.3	0	0	
	13-24	17-30	14-24	5.6-7.3	0	0	
	24-35	28-40	22-31	5.6-6.5	0	0	
	35-62	28-40	21-31	5.6-6.5	0	0	
	62	---	---	---	0	0	
Mounthope loam	0-1	---	---	---	0	0	
	1-3	17-25	14-21	5.6-7.3	0	0	
	3-7	20-27	17-23	5.6-6.5	0	0	
	7-15	20-27	17-24	5.6-6.5	0	0	
	15-22	27-35	22-28	5.6-6.5	0	0	
	22-26	27-35	21-29	5.6-6.5	0	0	
	26-31	27-35	21-32	5.6-6.5	0	0	
	31-42	27-35	20-32	5.6-6.5	0	0	
	42-52	20-35	13-28	5.6-6.5	0	0	
	52	---	---	---	0	0	
561:							
Bigridge loam	0-1	---	---	---	0	0	
	1-5	15-25	8.1-14	5.6-7.3	0	0	
	5-9	19-30	8.6-16	5.6-7.3	0	0	
	9-15	18-35	8.3-19	4.5-7.3	0	0	
	15-20	18-35	8.0-19	4.5-6.5	0	0	
	20-27	15-35	7.8-19	4.5-6.5	0	0	
	27-36	15-35	5.8-19	4.5-6.5	0	0	
	36-51	15-35	7.7-19	4.5-6.5	0	0	
	51-62	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
561:							
Minniecreek loam	0-2	15-20	8.1-11	5.1-6.5	0	0	
	2-8	18-22	9.7-12	5.6-6.5	0	0	
	8-15	24-30	13-16	5.6-6.5	0	0	
	15-24	24-30	13-16	5.6-6.5	0	0	
	24-32	29-37	15-20	5.1-6.5	0	0	
	32-47	---	---	---	0	0	
	47-58	---	---	---	0	0	
	58-75	---	---	---	0	0	
562:							
Bigridge loam	0-1	---	---	---	0	0	
	1-5	15-25	8.1-14	5.6-7.3	0	0	
	5-9	19-30	8.6-16	5.6-7.3	0	0	
	9-15	18-35	8.3-19	4.5-7.3	0	0	
	15-20	18-35	8.0-19	4.5-6.5	0	0	
	20-27	15-35	7.8-19	4.5-6.5	0	0	
	27-36	15-35	5.8-19	4.5-6.5	0	0	
	36-51	15-35	7.7-19	4.5-6.5	0	0	
	51-62	---	---	---	0	0	
Minniecreek loam	0-2	15-20	8.1-11	5.1-6.5	0	0	
	2-8	18-22	9.7-12	5.6-6.5	0	0	
	8-15	24-30	13-16	5.6-6.5	0	0	
	15-24	24-30	13-16	5.6-6.5	0	0	
	24-32	29-37	15-20	5.1-6.5	0	0	
	32-47	---	---	---	0	0	
	47-58	---	---	---	0	0	
	58-75	---	---	---	0	0	
563:							
Bigridge loam	0-1	---	---	---	0	0	
	1-5	15-25	8.1-14	5.6-7.3	0	0	
	5-9	19-30	8.6-16	5.6-7.3	0	0	
	9-15	18-35	8.3-19	4.5-7.3	0	0	
	15-20	18-35	8.0-19	4.5-6.5	0	0	
	20-27	15-35	7.8-19	4.5-6.5	0	0	
	27-36	15-35	5.8-19	4.5-6.5	0	0	
	36-51	15-35	7.7-19	4.5-6.5	0	0	
	51-62	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
563:							
Minniecreek loam	0-2	15-20	8.1-11	5.1-6.5	0	0	
	2-8	18-22	9.7-12	5.6-6.5	0	0	
	8-15	24-30	13-16	5.6-6.5	0	0	
	15-24	24-30	13-16	5.6-6.5	0	0	
	24-32	29-37	15-20	5.1-6.5	0	0	
	32-47	---	---	---	0	0	
	47-58	---	---	---	0	0	
	58-75	---	---	---	0	0	
564:							
Bigridge loam	0-1	---	---	---	0	0	
	1-5	15-25	8.1-14	5.6-7.3	0	0	
	5-9	19-30	8.6-16	5.6-7.3	0	0	
	9-15	18-35	8.3-19	4.5-7.3	0	0	
	15-20	18-35	8.0-19	4.5-6.5	0	0	
	20-27	15-35	7.8-19	4.5-6.5	0	0	
	27-36	15-35	5.8-19	4.5-6.5	0	0	
	36-51	15-35	7.7-19	4.5-6.5	0	0	
	51-62	---	---	---	0	0	
Minniecreek loam	0-2	15-20	8.1-11	5.1-6.5	0	0	
	2-8	18-22	9.7-12	5.6-6.5	0	0	
	8-15	24-30	13-16	5.6-6.5	0	0	
	15-24	24-30	13-16	5.6-6.5	0	0	
	24-32	29-37	15-20	5.1-6.5	0	0	
	32-47	---	---	---	0	0	
	47-58	---	---	---	0	0	
	58-75	---	---	---	0	0	
565:							
Dunstone loam, dry	0-2	12-20	16-29	5.0-6.5	0	0	
	2-7	16-22	9.0-18	6.0-6.6	0	0	
	7-10	16-24	11-19	6.0-6.7	0	0	
	10-16	23-32	11-18	5.8-6.8	0	0	
	16	---	0.0-0.0	---	0	0	
Argonaut taxadjunct loam	0-2	18-30	9.8-16	5.9-7.0	0	0	
	2-8	28-40	15-22	6.0-6.7	0	0	
	8-14	40-50	21-27	6.0-6.9	0	0	
	14-20	40-50	21-27	6.0-6.9	0	0	
	20-26	36-45	18-24	6.1-7.0	0	0	
	26-30	36-45	18-24	6.1-7.0	0	0	
	30	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
565:							
Sunnyslope loam----------	0-2	10-18	10-25	6.1-6.5	0	0	
	2-6	15-20	8.0-20	6.0-6.5	0	0	
	6-10	15-30	7.0-22	5.6-6.5	0	0	
	10-14	15-30	7.0-22	5.6-6.5	0	0	
	14	---	---	---	0	0	
566:							
Dunstone loam, dry----------	0-2	12-20	16-29	5.0-6.5	0	0	
	2-7	16-22	9.0-18	6.0-6.6	0	0	
	7-10	16-24	11-19	6.0-6.7	0	0	
	10-16	23-32	11-18	5.8-6.8	0	0	
	16	---	0.0-0.0	---	0	0	
Loafercreek silt loam, dry----------	0-2	14-22	16-33	5.5-7.0	0	0	
	2-4	15-24	8.0-22	5.5-7.0	0	0	
	4-11	15-24	8.0-22	5.8-6.7	0	0	
	11-20	18-30	8.0-21	6.0-6.8	0	0	
	20-29	18-30	8.0-25	6.0-7.0	0	0	
	29	---	0.0-0.0	---	0	0	
Katskillhill loam----------	0-2	12-18	---	5.0-6.5	0	0	
	2-8	15-20	13-18	6.0-6.5	0	0	
	8-12	21-25	17-21	6.0-6.5	0	0	
	12-19	35-50	27-38	4.5-6.5	0	0	
	19-29	45-55	29-40	6.6-8.0	0	0	
	29-42	45-55	29-40	6.6-8.0	0	0	
	42	---	---	---	0	0	
567:							
Dunstone loam, dry----------	0-2	12-20	16-29	5.0-6.5	0	0	
	2-7	16-22	9.0-18	6.0-6.6	0	0	
	7-10	16-24	11-19	6.0-6.7	0	0	
	10-16	23-32	11-18	5.8-6.8	0	0	
	16	---	0.0-0.0	---	0	0	
Loafercreek silt loam, dry----------	0-2	14-22	16-33	5.5-7.0	0	0	
	2-4	15-24	8.0-22	5.5-7.0	0	0	
	4-11	15-24	8.0-22	5.8-6.7	0	0	
	11-20	18-30	8.0-21	6.0-6.8	0	0	
	20-29	18-30	8.0-25	6.0-7.0	0	0	
	29	---	0.0-0.0	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
567:							
Argonaut taxadjunct loam	0-2	18-30	9.8-16	5.9-7.0	0	0	
	2-8	28-40	15-22	6.0-6.7	0	0	
	8-14	40-50	21-27	6.0-6.9	0	0	
	14-20	40-50	21-27	6.0-6.9	0	0	
	20-26	36-45	18-24	6.1-7.0	0	0	
	26-30	36-45	18-24	6.1-7.0	0	0	
	30	---	---	---	0	0	
577:							
Parkshill coarse sandy loam	0-2	12-17	6.5-9.4	5.8-6.7	0	0	
	2-8	14-17	7.5-9.3	5.6-6.7	0	0	
	8-18	16-19	8.4-10	5.6-6.5	0	0	
	18-26	16-19	8.4-10	5.6-6.5	0	0	
	26-35	18-23	9.1-12	5.7-6.7	0	0	
	35-53	18-33	9.1-17	5.6-7.0	0	0	
	53-61	16-26	8.1-14	5.9-6.6	0	0	
Flanly loam	0-2	12-18	6.6-9.9	4.7-6.5	0	0	
	2-5	15-20	8.1-11	5.8-6.5	0	0	
	5-10	18-28	9.7-15	5.6-6.5	0	0	
	10-23	22-35	12-19	5.6-7.0	0	0	
	23-26	---	---	---	0	0	
Hurleton gravelly sandy loam	0-3	10-17	5.5-9.4	6.5-6.5	0	0	
	3-7	10-17	5.5-9.4	5.8-6.5	0	0	
	7-12	14-20	7.6-11	5.8-6.5	0	0	
	12-16	16-24	8.5-13	5.6-6.5	0	0	
	16-19	19-32	10-17	4.5-6.5	0	0	
	19-25	20-35	10-18	5.4-6.5	0	0	
	25	---	---	---	0	0	
578:							
Flanly loam	0-2	12-18	6.6-9.9	4.7-6.5	0	0	
	2-5	15-20	8.1-11	5.8-6.5	0	0	
	5-10	18-28	9.7-15	5.6-6.5	0	0	
	10-23	22-35	12-19	5.6-7.0	0	0	
	23-26	---	---	---	0	0	
Swedesflat cobbly fine sandy loam	0-2	12-20	6.5-11	5.1-6.9	0	0	
	2-8	13-20	7.1-11	5.6-6.3	0	0	
	8-12	18-25	9.4-13	6.0-7.0	0	0	
	12-18	---	---	---	0	0	
	18	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	S
	In	Pct	meq/100g	pH	Pct	Pct	
580:							
Surnuf taxadjunct loam----------	0-1	---	---	---	0	0	
	1-5	20-25	10-13	6.5-7.0	0	0	
	5-11	22-40	9.5-16	5.5-6.5	0	0	
	11-18	35-55	11-18	5.5-6.5	0	0	
	18-31	35-65	11-20	5.0-6.0	0	0	
	31-43	35-65	11-20	5.0-6.0	0	0	
	43-54	35-65	11-20	5.0-6.0	0	0	
	54-67	25-35	---	5.0-5.8	0	0	
Griffgulch very gravelly silt loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-7	18-27	20-30	5.6-6.5	0	0	
	7-11	27-35	15-25	5.6-6.5	0	0	
	11-20	27-35	15-25	5.6-6.5	0	0	
	20-33	35-50	15-25	5.6-6.5	0	0	
	33-47	35-50	15-25	5.6-6.5	0	0	
	47-58	35-50	15-25	5.6-6.5	0	0	
	58	---	---	---	0	0	
Rock outcrop, metavolcanic.							
581:							
Surnuf taxadjunct loam----------	0-1	---	---	---	0	0	
	1-5	20-25	10-13	6.5-7.0	0	0	
	5-11	22-40	9.5-16	5.5-6.5	0	0	
	11-18	35-55	11-18	5.5-6.5	0	0	
	18-31	35-65	11-20	5.0-6.0	0	0	
	31-43	35-65	11-20	5.0-6.0	0	0	
	43-54	35-65	11-20	5.0-6.0	0	0	
	54-67	25-35	---	5.0-5.8	0	0	
Griffgulch very gravelly silt loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-7	18-27	20-30	5.6-6.5	0	0	
	7-11	27-35	15-25	5.6-6.5	0	0	
	11-20	27-35	15-25	5.6-6.5	0	0	
	20-33	35-50	15-25	5.6-6.5	0	0	
	33-47	35-50	15-25	5.6-6.5	0	0	
	47-58	35-50	15-25	5.6-6.5	0	0	
	58	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
582:							
Surnuf taxadjunct loam----------	0-1	---	---	---	0	0	
	1-5	20-25	10-13	6.5-7.0	0	0	
	5-11	22-40	9.5-16	5.5-6.5	0	0	
	11-18	35-55	11-18	5.5-6.5	0	0	
	18-31	35-65	11-20	5.0-6.0	0	0	
	31-43	35-65	11-20	5.0-6.0	0	0	
	43-54	35-65	11-20	5.0-6.0	0	0	
	54-67	25-35	---	5.0-5.8	0	0	
Griffgulch very gravelly silt loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-7	18-27	20-30	5.6-6.5	0	0	
	7-11	27-35	15-25	5.6-6.5	0	0	
	11-20	27-35	15-25	5.6-6.5	0	0	
	20-33	35-50	15-25	5.6-6.5	0	0	
	33-47	35-50	15-25	5.6-6.5	0	0	
	47-58	35-50	15-25	5.6-6.5	0	0	
	58	---	---	---	0	0	
583:							
Surnuf taxadjunct loam----------	0-1	---	---	---	0	0	
	1-5	20-25	10-13	6.5-7.0	0	0	
	5-11	22-40	9.5-16	5.5-6.5	0	0	
	11-18	35-55	11-18	5.5-6.5	0	0	
	18-31	35-65	11-20	5.0-6.0	0	0	
	31-43	35-65	11-20	5.0-6.0	0	0	
	43-54	35-65	11-20	5.0-6.0	0	0	
	54-67	25-35	---	5.0-5.8	0	0	
Griffgulch very gravelly silt loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-7	18-27	20-30	5.6-6.5	0	0	
	7-11	27-35	15-25	5.6-6.5	0	0	
	11-20	27-35	15-25	5.6-6.5	0	0	
	20-33	35-50	15-25	5.6-6.5	0	0	
	33-47	35-50	15-25	5.6-6.5	0	0	
	47-58	35-50	15-25	5.6-6.5	0	0	
	58	---	---	---	0	0	
584:							
Flanly loam----------	0-2	12-18	6.6-9.9	4.7-6.5	0	0	
	2-5	15-20	8.1-11	5.8-6.5	0	0	
	5-10	18-28	9.7-15	5.6-6.5	0	0	
	10-23	22-35	12-19	5.6-7.0	0	0	
	23-26	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
584:							
Swedesflat cobbly fine sandy loam----------	0-2	12-20	6.5-11	5.1-6.9	0	0	
	2-8	13-20	7.1-11	5.6-6.3	0	0	
	8-12	18-25	9.4-13	6.0-7.0	0	0	
	12-18	---	---	---	0	0	
	18	---	---	---	0	0	
Rackerby very gravelly sandy loam----------	0-2	8-16	4.4-8.8	6.1-6.5	0	0	
	2-5	10-20	5.4-11	6.1-6.5	0	0	
	5-13	10-20	5.3-11	6.1-6.5	0	0	
	13	---	---	---	0	0	
585:							
Flanly loam----------	0-2	12-18	6.6-9.9	4.7-6.5	0	0	
	2-5	15-20	8.1-11	5.8-6.5	0	0	
	5-10	18-28	9.7-15	5.6-6.5	0	0	
	10-23	22-35	12-19	5.6-7.0	0	0	
	23-26	---	---	---	0	0	
Sommeyflat loam----------	0-2	15-20	14-18	6.1-7.3	0	0	
	2-9	14-21	12-18	6.1-6.5	0	0	
	9-14	18-30	15-24	6.1-6.5	0	0	
	14-24	22-33	17-26	6.1-7.3	0	0	
	24-31	18-30	13-23	6.1-6.5	0	0	
	31-62	16-22	12-15	6.1-7.3	0	0	
	62-70	16-22	12-15	6.1-7.3	0	0	
586:							
Sommeyflat loam----------	0-2	15-20	14-18	6.1-7.3	0	0	
	2-9	14-21	12-18	6.1-6.5	0	0	
	9-14	18-30	15-24	6.1-6.5	0	0	
	14-24	22-33	17-26	6.1-7.3	0	0	
	24-31	18-30	13-23	6.1-6.5	0	0	
	31-62	16-22	12-15	6.1-7.3	0	0	
	62-70	16-22	12-15	6.1-7.3	0	0	
Mounthope loam----------	0-1	---	---	---	0	0	
	1-3	17-25	14-21	5.6-7.3	0	0	
	3-7	20-27	17-23	5.6-6.5	0	0	
	7-15	20-27	17-24	5.6-6.5	0	0	
	15-22	27-35	22-28	5.6-6.5	0	0	
	22-26	27-35	21-29	5.6-6.5	0	0	
	26-31	27-35	21-32	5.6-6.5	0	0	
	31-42	27-35	20-32	5.6-6.5	0	0	
	42-52	20-35	13-28	5.6-6.5	0	0	
	52	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
587:							
Sommeyflat loam----------	0-2	15-20	14-18	6.1-7.3	0	0	
	2-9	14-21	12-18	6.1-6.5	0	0	
	9-14	18-30	15-24	6.1-6.5	0	0	
	14-24	22-33	17-26	6.1-7.3	0	0	
	24-31	18-30	13-23	6.1-6.5	0	0	
	31-62	16-22	12-15	6.1-7.3	0	0	
	62-70	16-22	12-15	6.1-7.3	0	0	
Mounthope loam----------	0-1	---	---	---	0	0	
	1-3	17-25	14-21	5.6-7.3	0	0	
	3-7	20-27	17-23	5.6-6.5	0	0	
	7-15	20-27	17-24	5.6-6.5	0	0	
	15-22	27-35	22-28	5.6-6.5	0	0	
	22-26	27-35	21-29	5.6-6.5	0	0	
	26-31	27-35	21-32	5.6-6.5	0	0	
	31-42	27-35	20-32	5.6-6.5	0	0	
	42-52	20-35	13-28	5.6-6.5	0	0	
	52	---	---	---	0	0	
Hurleton gravelly sandy loam----------	0-3	10-17	5.5-9.4	6.5-6.5	0	0	
	3-7	10-17	5.5-9.4	5.8-6.5	0	0	
	7-12	14-20	7.6-11	5.8-6.5	0	0	
	12-16	16-24	8.5-13	5.6-6.5	0	0	
	16-19	19-32	10-17	4.5-6.5	0	0	
	19-25	20-35	10-18	5.4-6.5	0	0	
	25	---	---	---	0	0	
588:							
Ultic Haploxeralfs, thermic, high terrace---	0-2	14-17	9.5-14	5.1-6.5	0	0	
	2-6	18-20	12-14	5.1-6.0	0	0	
	6-12	20-30	11-18	5.1-6.0	0	0	
	12-20	20-30	11-16	5.1-6.0	0	0	
	20-32	26-37	14-20	5.1-6.5	0	0	
	32-39	20-26	11-14	6.1-7.3	0	0	
	39-50	20-26	11-14	6.1-7.3	0	0	
589:							
Ultic Haploxeralfs, thermic, high terrace---	0-2	14-17	9.5-14	5.1-6.5	0	0	
	2-6	18-20	12-14	5.1-6.0	0	0	
	6-12	20-30	11-18	5.1-6.0	0	0	
	12-20	20-30	11-16	5.1-6.0	0	0	
	20-32	26-37	14-20	5.1-6.5	0	0	
	32-39	20-26	11-14	6.1-7.3	0	0	
	39-50	20-26	11-14	6.1-7.3	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
590:							
Vistarobles sandy loam----------	0-5	16-26	8.6-14	5.1-7.3	0	0	
	5-10	16-26	8.6-14	5.1-7.3	0	0	
	10-14	40-50	21-26	6.1-7.3	0	0	
	14-34	3-10	1.6-5.3	6.6-8.4	0	0	0
	34-40	3-15	1.6-7.9	6.6-8.4	0	0	0
Redding loam----------	0-4	12-26	6.5-14	5.6-7.3	0	0	
	4-11	12-26	6.3-14	5.6-7.3	0	0	
	11-24	15-26	7.8-14	5.6-7.3	0	0	
	24-35	40-50	21-26	6.1-7.3	0	0	
	35-40	---	---	---	0	0	
Argonaut taxadjunct loam----------	0-2	18-30	9.8-16	5.9-7.0	0	0	
	2-8	28-40	15-22	6.0-6.7	0	0	
	8-14	40-50	21-27	6.0-6.9	0	0	
	14-20	40-50	21-27	6.0-6.9	0	0	
	20-26	36-45	18-24	6.1-7.0	0	0	
	26-30	36-45	18-24	6.1-7.0	0	0	
	30	---	---	---	0	0	
Haploxererts gravelly silty clay----------	0-2	30-45	20-41	5.1-6.5	0	0	
	2-10	45-60	23-42	6.1-7.3	0	0	
	10-30	50-65	25-44	6.1-7.3	0	0	
	30-33	40-55	6.7-27	6.6-8.4	0	0	
	33-41	40-55	6.7-27	6.6-8.4	0	0	
	41-44	---	---	---	0	0	
603:							
Oroville gravelly fine sandy loam----------	0-2	15-24	8.0-13	5.6-6.5	0	0	
	2-6	18-25	9.4-13	5.6-7.3	0	0	
	6-13	22-35	11-18	5.6-7.3	0	0	
	13-17	45-52	23-27	5.6-7.3	0	0	
	17-23	45-52	22-27	5.6-7.3	0	0	
	23-31	---	---	---	0	0	
	31-60	---	---	---	0	0	
Thermalito sandy loam----------	0-2	12-20	6.4-11	5.1-6.5	0	0	
	2-6	18-33	9.3-17	5.1-7.3	0	0	
	6-12	18-33	9.3-17	5.1-7.3	0	0	
	12-18	18-33	9.3-17	5.1-7.3	0	0	
	18-23	18-33	9.3-17	5.1-7.3	0	0	
	23-25	18-33	9.3-17	5.1-7.3	0	0	
	25-29	43-50	21-26	5.6-7.3	0	0	
	29-32	43-50	21-26	5.6-7.3	0	0	
	32-60	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
603:							
Fernandez sandy loam----------	0-2	15-18	8.0-9.7	5.6-6.5	0	0	
	2-6	18-30	9.3-16	5.6-7.3	0	0	
	6-18	18-30	9.3-16	5.6-7.3	0	0	
	18-28	35-50	18-26	5.6-7.3	0	0	
	28-44	35-50	18-26	5.6-7.3	0	0	
	44-57	35-50	18-26	5.6-7.3	0	0	
	57-65	35-50	18-26	5.6-7.3	0	0	
	65-73	35-50	18-26	5.6-7.3	0	0	
	73-85	---	---	---	---	---	
Thompsonflat fine sandy loam----------	0-3	12-22	6.4-12	5.6-6.5	0	0	
	3-7	18-38	9.3-20	5.6-7.3	0	0	
	7-11	18-38	9.3-20	5.6-7.3	0	0	
	11-15	18-38	9.3-20	5.6-7.3	0	0	
	15-22	38-55	20-29	5.6-8.4	0	0	0
	22-35	5-38	2.6-20	6.1-8.4	0	0	0
	35-45	5-38	2.6-20	6.1-8.4	0	0	0
	45-53	5-38	2.6-20	6.1-8.4	0	0	0
	53-66	5-38	2.6-20	6.1-8.4	0	0	0
	66-80	5-38	2.6-20	6.1-8.4	0	0	0
605:							
Duric Xerarents fine sandy loam, leveled----	0-5	10-35	5.7-25	5.6-6.5	0	0	
	5-12	12-50	6.6-33	6.6-8.4	0	0	0
	12-18	---	---	---	---	---	
Oroville gravelly fine sandy loam----------	0-2	15-24	8.0-13	5.6-6.5	0	0	
	2-6	18-25	9.4-13	5.6-7.3	0	0	
	6-13	22-35	11-18	5.6-7.3	0	0	
	13-17	45-52	23-27	5.6-7.3	0	0	
	17-23	45-52	22-27	5.6-7.3	0	0	
	23-31	---	---	---	0	0	
	31-60	---	---	---	0	0	
606:							
Redtough loam----------	0-1	15-22	15-25	5.6-7.0	0	0	
	1-7	18-27	15-25	6.1-7.0	0	0	
	7-13	18-27	15-25	6.1-7.0	0	0	
	13	---	---	---	0	0	
Fallager loam----------	0-1	20-30	15-25	6.1-6.5	0	0	
	1-3	35-40	15-25	6.1-7.3	0	0	
	3-7	40-60	15-25	6.6-8.4	0	0	0
	7	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
606:							
Anita, gravelly duripan	0-3	40-60	40-50	6.3-8.0	0	0	0
	3-8	40-60	40-50	6.3-8.0	0	0	0
	8-15	40-60	40-50	6.3-8.0	0	0	0
	15	---	---	---	0-1	0	
609:							
Anita, gravelly duripan	0-3	40-60	40-50	6.3-8.0	0	0	0
	3-8	40-60	40-50	6.3-8.0	0	0	0
	8-15	40-60	40-50	6.3-8.0	0	0	0
	15	---	---	---	0-1	0	
Tuscan taxadjunct gravelly clay loam	0-2	18-30	16-25	5.6-7.3	0	0	0
	2-5	25-46	20-35	6.1-8.4	0	0	0
	5-13	35-46	27-35	6.6-8.4	0	0	0
	13-23	35-46	27-35	6.6-8.4	0	0	0
	23-29	35-46	23-34	6.6-8.4	0	0	0
	29	---	---	---	---	---	
614:							
Doemill gravelly loam	0-1	15-24	20-25	5.8-6.5	0	0	
	1-5	18-30	20-25	6.3-7.0	0	0	
	5-9	18-30	20-25	6.3-7.0	0	0	
	9-14	18-30	20-25	6.3-7.0	0	0	
	14	---	---	---	0	0	
Jokerst very cobbly loam	0-1	12-21	18-25	6.3-7.0	0	0	
	1-4	16-25	18-25	6.3-7.0	0	0	
	4	---	---	---	0	0	
615:							
Doemill gravelly loam	0-1	15-24	20-25	5.8-6.5	0	0	
	1-5	18-30	20-25	6.3-7.0	0	0	
	5-9	18-30	20-25	6.3-7.0	0	0	
	9-14	18-30	20-25	6.3-7.0	0	0	
	9	---	---	---	0	0	
Jokerst very cobbly loam	0-1	12-21	18-25	6.3-7.0	0	0	
	1-4	16-25	18-25	6.3-7.0	0	0	
	4	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
616:							
Jokerst very cobbly loam	0-1	12-21	18-25	6.3-7.0	0	0	
	1-4	16-25	18-25	6.3-7.0	0	0	
	4	---	---	---	0	0	
Doemill gravelly loam	0-1	15-24	20-25	5.8-6.5	0	0	
	1-5	18-30	20-25	6.3-7.0	0	0	
	5-9	18-30	20-25	6.3-7.0	0	0	
	9-14	18-30	20-25	6.3-7.0	0	0	
	14	---	---	---	0	0	
Typic Haploxeralfs gravelly loam	0-2	20-30	15-30	6.1-7.8	0	0	
	2-8	27-50	15-30	6.6-7.8	0	0	
	8-16	27-50	15-30	6.6-7.8	0	0	
	16-27	27-50	15-30	6.6-7.8	0	0	
	27-40	27-50	15-30	6.6-7.8	0	0	
	40	---	---	---	0	0	
617:							
Doemill gravelly loam	0-1	15-24	20-25	5.8-6.5	0	0	
	1-5	18-30	20-25	6.3-7.0	0	0	
	5-9	18-30	20-25	6.3-7.0	0	0	
	9-14	18-30	20-25	6.3-7.0	0	0	
	14	---	---	---	0	0	
Jokerst very cobbly loam	0-1	12-21	18-25	6.3-7.0	0	0	
	1-4	16-25	18-25	6.3-7.0	0	0	
	4	---	---	---	0	0	
Typic Haploxeralfs gravelly loam	0-2	20-30	15-30	6.1-7.8	0	0	
	2-8	27-50	15-30	6.6-7.8	0	0	
	8-16	27-50	15-30	6.6-7.8	0	0	
	16-27	27-50	15-30	6.6-7.8	0	0	
	27-40	27-50	15-30	6.6-7.8	0	0	
	40	---	---	---	0	0	
619:							
Carhart taxadjunct clay	0-4	50-60	40-50	6.1-7.3	0	0	
	4-11	40-60	40-50	6.6-7.3	0	0	
	11-17	40-60	40-50	6.6-7.3	0	0	
	17	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
620:							
Doemill gravelly loam----------	0-1	15-24	20-25	5.8-6.5	0	0	
	1-5	18-30	20-25	6.3-7.0	0	0	
	5-9	18-30	20-25	6.3-7.0	0	0	
	9-14	18-30	20-25	6.3-7.0	0	0	
	14	---	---	---	0	0	
Jokerst very cobbly loam----------	0-1	12-21	18-25	6.3-7.0	0	0	
	1-4	16-25	18-25	6.3-7.0	0	0	
	4	---	---	---	0	0	
Ultic Haploxeralfs, thermic, gravelly loam--	0-2	18-27	25-35	6.1-7.0	0	0	
	2-6	20-39	20-25	5.6-6.8	0	0	
	6-13	20-39	20-25	5.6-6.8	0	0	
	13-21	20-39	20-25	5.6-6.8	0	0	
	21-31	20-39	20-25	5.6-6.8	0	0	
	31	---	---	---	0	0	
621:							
Doemill gravelly loam----------	0-1	15-24	20-25	5.8-6.5	0	0	
	1-5	18-30	20-25	6.3-7.0	0	0	
	5-9	18-30	20-25	6.3-7.0	0	0	
	9-14	18-30	20-25	6.3-7.0	0	0	
	14	---	---	---	0	0	
Jokerst very cobbly loam----------	0-1	12-21	18-25	6.3-7.0	0	0	
	1-4	16-25	18-25	6.3-7.0	0	0	
	4	---	---	---	0	0	
Ultic Haploxeralfs, thermic, gravelly loam--	0-2	18-27	25-35	6.1-7.0	0	0	
	2-6	20-39	20-25	5.6-6.8	0	0	
	6-13	20-39	20-25	5.6-6.8	0	0	
	13-21	20-39	20-25	5.6-6.8	0	0	
	21-31	20-39	20-25	5.6-6.8	0	0	
	31	---	---	---	0	0	
622:							
Xerorthents, shallow----------	0-2	18-35	15-30	6.6-7.8	0	0	
	2-5	23-42	15-30	6.1-7.8	0	0	
	5-8	23-42	15-30	6.1-7.8	0	0	
	8	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sal
	In	Pct	meq/100g	pH	Pct	Pct	d
622:							
Typic Haploxeralfs gravelly loam----------	0-2	20-30	15-30	6.1-7.8	0	0	
	2-8	27-50	15-30	6.6-7.8	0	0	
	8-16	27-50	15-30	6.6-7.8	0	0	
	16-27	27-50	15-30	6.6-7.8	0	0	
	27-40	27-50	15-30	6.6-7.8	0	0	
	40	---	---	---	0	0	
Rock outcrop, mudflow-breccia cliffs.							
623:							
Xerorthents, shallow----------	0-2	18-35	15-30	6.6-7.8	0	0	
	2-5	23-42	15-30	6.1-7.8	0	0	
	5-8	23-42	15-30	6.1-7.8	0	0	
	8	---	---	---	0	0	
Typic Haploxeralfs gravelly loam----------	0-2	20-30	15-30	6.1-7.8	0	0	
	2-8	27-50	15-30	6.6-7.8	0	0	
	8-16	27-50	15-30	6.6-7.8	0	0	
	16-27	27-50	15-30	6.6-7.8	0	0	
	27-40	27-50	15-30	6.6-7.8	0	0	
	40	---	---	---	0	0	
Rock outcrop, mudflow-breccia cliffs.							
624:							
Ultic Haploxeralfs, mesic, gravelly loam----	0-1	---	---	---	0	0	
	1-4	20-26	20-25	6.1-7.0	0	0	
	4-9	25-35	8.0-20	6.1-7.0	0	0	
	9-23	25-35	8.0-20	6.1-7.0	0	0	
	23-32	25-35	8.0-20	6.1-7.0	0	0	
	32-42	35-50	8.0-20	5.1-6.5	0	0	
	42	---	---	---	0	0	
Rockstripe very gravelly loam----------	0-2	15-25	15-25	6.1-6.8	0	0	
	2-6	17-27	15-25	6.1-6.5	0	0	
	6-9	17-27	15-25	6.1-6.5	0	0	
	9	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
625:							
Ultic Haploxeralfs, mesic, gravelly loam----	0-1	---	---	---	0	0	
	1-4	20-26	20-25	6.1-7.0	0	0	
	4-9	25-35	8.0-20	6.1-7.0	0	0	
	9-23	25-35	8.0-20	6.1-7.0	0	0	
	23-32	25-35	8.0-20	6.1-7.0	0	0	
	32-42	35-50	8.0-20	5.1-6.5	0	0	
	42	---	---	---	0	0	
Rockstripe very gravelly loam----------	0-2	15-25	15-25	6.1-6.8	0	0	
	2-6	17-27	15-25	6.1-6.5	0	0	
	6-9	17-27	15-25	6.1-6.5	0	0	
	9	---	---	---	0	0	
626:							
Ultic Haploxeralfs gravelly loam----------	0-4	20-26	25-35	6.1-7.8	0	0	
	4-10	23-35	15-30	6.1-7.8	0	0	
	10-18	23-35	15-30	6.1-7.8	0	0	
	18-35	35-50	15-30	6.1-7.3	0	0	
	35-48	35-50	15-30	6.1-7.3	0	0	
	48	---	---	---	0	0	
Rockstripe very gravelly loam----------	0-2	15-25	15-25	6.1-6.8	0	0	
	2-6	17-27	15-25	6.1-6.5	0	0	
	6-9	17-27	15-25	6.1-6.5	0	0	
	9	---	---	---	0	0	
Rock outcrop, mudflow-breccia cliffs.							
627:							
Ultic Haploxeralfs gravelly loam----------	0-4	20-26	25-35	6.1-7.8	0	0	
	4-10	23-35	15-30	6.1-7.8	0	0	
	10-18	23-35	15-30	6.1-7.8	0	0	
	18-35	35-50	15-30	6.1-7.3	0	0	
	35-48	35-50	15-30	6.1-7.3	0	0	
	40	---	---	---	0	0	
Rockstripe very gravelly loam----------	0-2	15-25	15-25	6.1-6.8	0	0	
	2-6	17-27	15-25	6.1-6.5	0	0	
	6-9	17-27	15-25	6.1-6.5	0	0	
	9	---	---	---	0	0	
Rock outcrop, mudflow-breccia cliffs.							

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
628:							
Rockstripe very gravelly loam----------	0-2	15-25	15-25	6.1-6.8	0	0	
	2-6	17-27	15-25	6.1-6.5	0	0	
	6-9	17-27	15-25	6.1-6.5	0	0	
	9	---	---	---	0	0	
Ultic Haploxeralfs gravelly loam----------	0-4	20-26	25-35	6.1-7.8	0	0	
	4-10	23-35	15-30	6.1-7.8	0	0	
	10-18	23-35	15-30	6.1-7.8	0	0	
	18-35	35-50	15-30	6.1-7.3	0	0	
	35-48	35-50	15-30	6.1-7.3	0	0	
	48	---	---	---	0	0	
Rock outcrop, mudflow-breccia cliffs.							
629:							
Slideland gravelly loam----------	0-2	18-27	30-45	6.1-7.0	0	0	
	2-9	20-35	20-35	5.8-7.0	0	0	
	9-14	20-35	20-35	5.8-7.0	0	0	
	14-21	20-35	20-35	5.8-7.0	0	0	
	21-28	20-35	20-35	5.8-7.0	0	0	
	28-38	35-50	20-35	6.1-7.5	0	0	
	38-51	35-50	20-35	6.1-7.5	0	0	
	51-69	35-50	20-35	6.1-7.5	0	0	
	69-80	35-50	20-35	6.1-7.5	0	0	
630:							
Slideland gravelly loam----------	0-2	18-27	30-45	6.1-7.0	0	0	
	2-9	20-35	20-35	5.8-7.0	0	0	
	9-14	20-35	20-35	5.8-7.0	0	0	
	14-21	20-35	20-35	5.8-7.0	0	0	
	21-28	20-35	20-35	5.8-7.0	0	0	
	28-38	35-50	20-35	6.1-7.5	0	0	
	38-51	35-50	20-35	6.1-7.5	0	0	
	51-69	35-50	20-35	6.1-7.5	0	0	
	69-80	35-50	20-35	6.1-7.5	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
631:							
Slideland gravelly loam----------	0-2	18-27	30-45	6.1-7.0	0	0	
	2-9	20-35	20-35	5.8-7.0	0	0	
	9-14	20-35	20-35	5.8-7.0	0	0	
	14-21	20-35	20-35	5.8-7.0	0	0	
	21-28	20-35	20-35	5.8-7.0	0	0	
	28-38	35-50	20-35	6.1-7.5	0	0	
	38-51	35-50	20-35	6.1-7.5	0	0	
	51-69	35-50	20-35	6.1-7.5	0	0	
	69-80	35-50	20-35	6.1-7.5	0	0	
632:							
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	---	0	0	
	2-6	23-30	25-35	6.1-7.3	0	0	
	6-10	25-40	15-30	5.6-6.5	0	0	
	10-17	25-40	15-30	5.6-6.5	0	0	
	17-28	25-40	15-30	5.6-6.5	0	0	
	28-40	25-40	15-30	5.6-6.5	0	0	
	40-50	29-50	15-30	5.1-6.5	0	0	
	50-71	29-50	15-30	5.1-6.5	0	0	
	71-84	29-50	15-30	5.1-6.5	0	0	
Ultic Haploxeralfs, conglomerate, moderately deep----------	0-2	---	---	---	0	0	
	2-5	23-27	25-35	6.1-7.3	0	0	
	5-10	27-35	15-30	6.1-7.3	0	0	
	10-25	27-35	15-30	6.1-7.3	0	0	
	25	---	---	---	0	0	
633:							
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	---	0	0	
	2-6	23-30	25-35	6.1-7.3	0	0	
	6-10	25-40	15-30	5.6-6.5	0	0	
	10-17	25-40	15-30	5.6-6.5	0	0	
	17-28	25-40	15-30	5.6-6.5	0	0	
	28-40	25-40	15-30	5.6-6.5	0	0	
	40-50	29-50	15-30	5.1-6.5	0	0	
	50-71	29-50	15-30	5.1-6.5	0	0	
	71-84	29-50	15-30	5.1-6.5	0	0	
Ultic Haploxeralfs, conglomerate, moderately deep----------	0-2	---	---	---	0	0	
	2-5	23-27	25-35	6.1-7.3	0	0	
	5-10	27-35	15-30	6.1-7.3	0	0	
	10-25	27-35	15-30	6.1-7.3	0	0	
	25	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
634:							
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	---	0	0	
	2-6	23-30	25-35	6.1-7.3	0	0	
	6-10	25-40	15-30	5.6-6.5	0	0	
	10-17	25-40	15-30	5.6-6.5	0	0	
	17-28	25-40	15-30	5.6-6.5	0	0	
	28-40	25-40	15-30	5.6-6.5	0	0	
	40-50	29-50	15-30	5.1-6.5	0	0	
	50-71	29-50	15-30	5.1-6.5	0	0	
	71-84	29-50	15-30	5.1-6.5	0	0	
Ultic Haploxeralfs, conglomerate, moderately deep----------	0-2	---	---	---	0	0	
	2-5	23-27	25-35	6.1-7.3	0	0	
	5-10	27-35	15-30	6.1-7.3	0	0	
	10-25	27-35	15-30	6.1-7.3	0	0	
	25	---	---	---	0	0	
635:							
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	---	0	0	
	2-6	23-30	25-35	6.1-7.3	0	0	
	6-10	25-40	15-30	5.6-6.5	0	0	
	10-17	25-40	15-30	5.6-6.5	0	0	
	17-28	25-40	15-30	5.6-6.5	0	0	
	28-40	25-40	15-30	5.6-6.5	0	0	
	40-50	29-50	15-30	5.1-6.5	0	0	
	50-71	29-50	15-30	5.1-6.5	0	0	
	71-84	29-50	15-30	5.1-6.5	0	0	
Ultic Haploxeralfs, conglomerate, moderately deep----------	0-2	---	---	---	0	0	
	2-5	23-27	25-35	6.1-7.3	0	0	
	5-10	27-35	15-30	6.1-7.3	0	0	
	10-25	27-35	15-30	6.1-7.3	0	0	
	25	---	---	---	0	0	
636:							
Ultic Haploxeralfs, conglomerate, moderately deep----------	0-2	---	---	---	0	0	
	2-5	23-27	25-35	6.1-7.3	0	0	
	5-10	27-35	15-30	6.1-7.3	0	0	
	10-25	27-35	15-30	6.1-7.3	0	0	
	25	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
636:							
Ultic Haploxeralfs, conglomerate, very deep	0-2	---	---	---	0	0	
	2-6	23-30	25-35	6.1-7.3	0	0	
	6-10	25-40	15-30	5.6-6.5	0	0	
	10-17	25-40	15-30	5.6-6.5	0	0	
	17-28	25-40	15-30	5.6-6.5	0	0	
	28-40	25-40	15-30	5.6-6.5	0	0	
	40-50	29-50	15-30	5.1-6.5	0	0	
	50-71	29-50	15-30	5.1-6.5	0	0	
	71-84	29-50	15-30	5.1-6.5	0	0	
637:							
Ultic Haploxeralfs, sandstone----------	0-0.5	---	---	---	0	0	
	0.5-2	10-26	15-25	5.6-7.3	0	0	
	2-6	10-30	12-25	5.6-7.3	0	0	
	6-11	10-30	12-25	5.6-7.3	0	0	
	11-17	10-30	12-25	5.6-7.3	0	0	
	17-24	10-30	12-25	5.6-7.3	0	0	
	24-32	10-30	12-25	5.6-7.3	0	0	
	32-53	10-30	12-25	5.6-7.3	0	0	
	53-65	---	---	---	0	0	
	65	---	---	---	0	0	
638:							
Ultic Haploxeralfs, sandstone----------	0-0.5	---	---	---	0	0	
	0.5-2	10-26	15-25	5.6-7.3	0	0	
	2-6	10-30	12-25	5.6-7.3	0	0	
	6-11	10-30	12-25	5.6-7.3	0	0	
	11-17	10-30	12-25	5.6-7.3	0	0	
	17-24	10-30	12-25	5.6-7.3	0	0	
	24-32	10-30	12-25	5.6-7.3	0	0	
	32-53	10-30	12-25	5.6-7.3	0	0	
	53-65	---	---	---	0	0	
	65	---	---	---	0	0	
639:							
Ultic Haploxeralfs, sandstone----------	0-0.5	---	---	---	0	0	
	0.5-2	10-26	15-25	5.6-7.3	0	0	
	2-6	10-30	12-25	5.6-7.3	0	0	
	6-11	10-30	12-25	5.6-7.3	0	0	
	11-17	10-30	12-25	5.6-7.3	0	0	
	17-24	10-30	12-25	5.6-7.3	0	0	
	24-32	10-30	12-25	5.6-7.3	0	0	
	32-53	10-30	12-25	5.6-7.3	0	0	
	53-65	---	---	---	0	0	
	65	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
640:							
Ultic Haploxeralfs, sandstone----------	0-0.5	---	---	---	0	0	
	0.5-2	10-26	15-25	5.6-7.3	0	0	
	2-6	10-30	12-25	5.6-7.3	0	0	
	6-11	10-30	12-25	5.6-7.3	0	0	
	11-17	10-30	12-25	5.6-7.3	0	0	
	17-24	10-30	12-25	5.6-7.3	0	0	
	24-32	10-30	12-25	5.6-7.3	0	0	
	32-53	10-30	12-25	5.6-7.3	0	0	
	53-65	---	---	---	0	0	
	65	---	---	---	0	0	
641:							
Ultic Haploxeralfs, sandstone----------	0-0.5	---	---	---	0	0	
	0.5-2	10-26	15-25	5.6-7.3	0	0	
	2-6	10-30	12-25	5.6-7.3	0	0	
	6-11	10-30	12-25	5.6-7.3	0	0	
	11-17	10-30	12-25	5.6-7.3	0	0	
	17-24	10-30	12-25	5.6-7.3	0	0	
	24-32	10-30	12-25	5.6-7.3	0	0	
	32-53	10-30	12-25	5.6-7.3	0	0	
	53-65	---	---	---	0	0	
	65	---	---	---	0	0	
642:							
Chinacamp gravelly loam----------	0-1	---	---	---	0	0	
	1-5	20-26	30-45	6.1-7.3	0	0	
	5-15	27-42	15-35	6.0-7.3	0	0	
	15-29	27-42	15-35	6.0-7.3	0	0	
	29-38	27-42	15-35	6.0-7.3	0	0	
	38-44	27-42	15-35	6.0-7.3	0	0	
	44-61	27-42	15-35	6.0-7.3	0	0	
	61-72	27-42	15-35	6.0-7.3	0	0	
643:							
Chinacamp gravelly loam----------	0-1	---	---	---	0	0	
	1-5	20-26	30-45	6.1-7.3	0	0	
	5-15	27-42	15-35	6.0-7.3	0	0	
	15-29	27-42	15-35	6.0-7.3	0	0	
	29-38	27-42	15-35	6.0-7.3	0	0	
	38-44	27-42	15-35	6.0-7.3	0	0	
	44-61	27-42	15-35	6.0-7.3	0	0	
	61-72	27-42	15-35	6.0-7.3	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
644:							
Chinacamp gravelly loam----------	0-1	---	---	---	0	0	
	1-5	20-26	30-45	6.1-7.3	0	0	
	5-15	27-42	15-35	6.0-7.3	0	0	
	15-29	27-42	15-35	6.0-7.3	0	0	
	29-38	27-42	15-35	6.0-7.3	0	0	
	38-44	27-42	15-35	6.0-7.3	0	0	
	44-61	27-42	15-35	6.0-7.3	0	0	
	61-72	27-42	15-35	6.0-7.3	0	0	
645:							
Chinacamp gravelly loam----------	0-1	---	---	---	0	0	
	1-5	20-26	30-45	6.1-7.3	0	0	
	5-15	27-42	15-35	6.0-7.3	0	0	
	15-29	27-42	15-35	6.0-7.3	0	0	
	29-38	27-42	15-35	6.0-7.3	0	0	
	38-44	27-42	15-35	6.0-7.3	0	0	
	44-61	27-42	15-35	6.0-7.3	0	0	
	61-72	27-42	15-35	6.0-7.3	0	0	
646:							
Coalcanyon taxadjunct very gravelly loam----	0-2	20-27	25-40	6.1-7.3	0	0	
	2-6	23-35	20-32	6.1-7.3	0	0	
	6-14	23-35	20-32	6.1-7.3	0	0	
	14-24	23-35	20-32	6.1-7.3	0	0	
	24-42	23-35	20-32	6.1-7.3	0	0	
	42-54	30-50	20-30	6.1-7.3	0	0	
	54-72	30-50	20-30	6.1-7.3	0	0	
647:							
Coalcanyon taxadjunct very gravelly loam----	0-2	20-27	25-40	6.1-7.3	0	0	
	2-6	23-35	20-32	6.1-7.3	0	0	
	6-14	23-35	20-32	6.1-7.3	0	0	
	14-24	23-35	20-32	6.1-7.3	0	0	
	24-42	23-35	20-32	6.1-7.3	0	0	
	42-54	30-50	20-30	6.1-7.3	0	0	
	54-72	30-50	20-30	6.1-7.3	0	0	
648:							
Coalcanyon taxadjunct very gravelly loam----	0-2	20-27	25-40	6.1-7.3	0	0	
	2-6	23-35	20-32	6.1-7.3	0	0	
	6-14	23-35	20-32	6.1-7.3	0	0	
	14-24	23-35	20-32	6.1-7.3	0	0	
	24-42	23-35	20-32	6.1-7.3	0	0	
	42-54	30-50	20-30	6.1-7.3	0	0	
	54-72	30-50	20-30	6.1-7.3	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
649:							
Coalcanyon taxadjunct very gravelly loam----	0-2	20-27	25-40	6.1-7.3	0	0	
	2-6	23-35	20-32	6.1-7.3	0	0	
	6-14	23-35	20-32	6.1-7.3	0	0	
	14-24	23-35	20-32	6.1-7.3	0	0	
	24-42	23-35	20-32	6.1-7.3	0	0	
	42-54	30-50	20-30	6.1-7.3	0	0	
	54-72	30-50	20-30	6.1-7.3	0	0	
650:							
Schott very gravelly loam----------	0-2	---	---	---	0	0	
	2-6	15-25	20-30	6.1-7.0	0	0	
	6-13	18-35	15-25	5.1-6.5	0	0	
	13-22	18-35	10-20	5.1-6.5	0	0	
	22-40	18-35	10-20	5.1-6.5	0	0	
	40-50	18-35	10-20	5.1-6.5	0	0	
	50	---	---	---	0	0	
651:							
Schott very gravelly loam----------	0-2	---	---	---	0	0	
	2-6	15-25	20-30	6.1-7.0	0	0	
	6-13	18-35	15-25	5.1-6.5	0	0	
	13-22	18-35	10-20	5.1-6.5	0	0	
	22-40	18-35	10-20	5.1-6.5	0	0	
	40-50	18-35	10-20	5.1-6.5	0	0	
	50	---	---	---	0	0	
652:							
Schott very gravelly loam----------	0-2	---	---	---	0	0	
	2-6	15-25	20-30	6.1-7.0	0	0	
	6-13	18-35	15-25	5.1-6.5	0	0	
	13-22	18-35	10-20	5.1-6.5	0	0	
	22-40	18-35	10-20	5.1-6.5	0	0	
	40-50	18-35	10-20	5.1-6.5	0	0	
	50	---	---	---	0	0	
Rock outcrop, mudflow breccia.							
654:							
Coridge bouldery loam----------	0-1	20-27	15-25	5.6-7.3	0	0	
	1-6	25-35	15-25	6.1-7.3	0	0	
	6-12	25-35	15-25	6.1-7.3	0	0	
	12-19	25-35	15-25	6.1-7.3	0	0	
	19-24	35-50	15-25	6.1-7.3	0	0	
	24	---	---	---	0	0	
Rock outcrop, Cohasset basalt.							

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
655:							
Coridge bouldery loam----------	0-1	20-27	15-25	5.6-7.3	0	0	
	1-6	25-35	15-25	6.1-7.3	0	0	
	6-12	25-35	15-25	6.1-7.3	0	0	
	12-19	25-35	15-25	6.1-7.3	0	0	
	19-24	35-50	15-25	6.1-7.3	0	0	
	24	---	---	---	0	0	
Rock outcrop, Cohasset basalt.							
656:							
Rock outcrop, basalt cliffs.							
Coalcanyon taxadjunct very gravelly loam----	0-2	20-27	25-40	6.1-7.3	0	0	
	2-6	23-35	20-32	6.1-7.3	0	0	
	6-14	23-35	20-32	6.1-7.3	0	0	
	14-24	23-35	20-32	6.1-7.3	0	0	
	24-42	23-35	20-32	6.1-7.3	0	0	
	42-54	30-50	20-30	6.1-7.3	0	0	
	54-72	30-50	20-30	6.1-7.3	0	0	
657:							
Bonneyridge sandy loam----------	0-1	---	---	---	0	0	
	1-3	5-15	7.9-28	5.6-7.3	0	0	
	3-6	5-15	7.9-28	5.6-7.3	0	0	
	6-16	5-18	4.5-24	5.1-6.5	0	0	
	16-22	5-18	4.5-24	5.1-6.5	0	0	
	22-31	5-18	4.5-24	5.1-6.5	0	0	
	31-39	5-18	4.5-24	5.1-6.5	0	0	
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	
Chawanakee gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-5	2-6	8.0-15	5.6-6.5	0	0	
	5-11	2-6	2.0-10	5.1-6.5	0	0	
	11-19	2-6	2.0-10	5.1-6.5	0	0	
	19	---	---	---	0	0	
Rock outcrop, quartz diorite.							

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
658:							
Bonneyridge sandy loam----------	0-1	---	---	---	0	0	
	1-3	5-15	7.9-28	5.6-7.3	0	0	
	3-6	5-15	7.9-28	5.6-7.3	0	0	
	6-16	5-18	4.5-24	5.1-6.5	0	0	
	16-22	5-18	4.5-24	5.1-6.5	0	0	
	22-31	5-18	4.5-24	5.1-6.5	0	0	
	31-39	5-18	4.5-24	5.1-6.5	0	0	
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	
Chawanakee gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-5	2-6	8.0-15	5.6-6.5	0	0	
	5-11	2-6	2.0-10	5.1-6.5	0	0	
	11-19	2-6	2.0-10	5.1-6.5	0	0	
	19	---	---	---	0	0	
Rock outcrop, quartz diorite.							
659:							
Bonneyridge sandy loam----------	0-1	---	---	---	0	0	
	1-3	5-15	7.9-28	5.6-7.3	0	0	
	3-6	5-15	7.9-28	5.6-7.3	0	0	
	6-16	5-18	4.5-24	5.1-6.5	0	0	
	16-22	5-18	4.5-24	5.1-6.5	0	0	
	22-31	5-18	4.5-24	5.1-6.5	0	0	
	31-39	5-18	4.5-24	5.1-6.5	0	0	
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	
Chawanakee gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-5	2-6	8.0-15	5.6-6.5	0	0	
	5-11	2-6	2.0-10	5.1-6.5	0	0	
	11-19	2-6	2.0-10	5.1-6.5	0	0	
	19	---	---	---	0	0	
Rock outcrop, quartz diorite.							

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
660:							
Bonneyridge sandy loam----------	0-1	---	---	---	0	0	
	1-3	5-15	7.9-28	5.6-7.3	0	0	
	3-6	5-15	7.9-28	5.6-7.3	0	0	
	6-16	5-18	4.5-24	5.1-6.5	0	0	
	16-22	5-18	4.5-24	5.1-6.5	0	0	
	22-31	5-18	4.5-24	5.1-6.5	0	0	
	31-39	5-18	4.5-24	5.1-6.5	0	0	
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	
Chawanakee gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-5	2-6	8.0-15	5.6-6.5	0	0	
	5-11	2-6	2.0-10	5.1-6.5	0	0	
	11-19	2-6	2.0-10	5.1-6.5	0	0	
	19	---	---	---	0	0	
Rock outcrop, quartz diorite.							
661:							
Millerridge gravelly sandy clay loam--------	0-2	20-27	10-20	6.1-7.0	0	0	
	2-6	27-35	5.0-15	6.1-7.0	0	0	
	6-12	27-35	5.0-15	6.1-7.0	0	0	
	12-20	30-50	5.0-15	6.1-7.0	0	0	
	20-26	30-50	5.0-15	6.1-7.0	0	0	
	26	---	---	---	0	0	
Boxrobber cobbly sandy clay loam----------	0-2	22-30	10-20	6.1-7.3	0	0	
	2-8	27-35	5.0-15	6.1-7.3	0	0	
	8-16	27-35	5.0-15	6.1-7.3	0	0	
	16-30	---	---	---	0	0	
	30	---	---	---	0	0	
662:							
Millerridge gravelly sandy clay loam--------	0-2	20-27	10-20	6.1-7.0	0	0	
	2-6	27-35	5.0-15	6.1-7.0	0	0	
	6-12	27-35	5.0-15	6.1-7.0	0	0	
	12-20	30-50	5.0-15	6.1-7.0	0	0	
	20-26	30-50	5.0-15	6.1-7.0	0	0	
	26	---	---	---	0	0	
Boxrobber cobbly sandy clay loam----------	0-2	22-30	10-20	6.1-7.3	0	0	
	2-8	27-35	5.0-15	6.1-7.3	0	0	
	8-16	27-35	5.0-15	6.1-7.3	0	0	
	16-30	---	---	---	0	0	
	30	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
663:							
Millerridge gravelly sandy clay loam--------	0-2	20-27	10-20	6.1-7.0	0	0	
	2-6	27-35	5.0-15	6.1-7.0	0	0	
	6-12	27-35	5.0-15	6.1-7.0	0	0	
	12-20	30-50	5.0-15	6.1-7.0	0	0	
	20-26	30-50	5.0-15	6.1-7.0	0	0	
	26	---	---	---	0	0	
Boxrobber cobbly sandy clay loam----------	0-2	22-30	10-20	6.1-7.3	0	0	
	2-8	27-35	5.0-15	6.1-7.3	0	0	
	8-16	27-35	5.0-15	6.1-7.3	0	0	
	16-30	---	---	---	0	0	
	30	---	---	---	0	0	
664:							
Millerridge gravelly sandy clay loam--------	0-2	20-27	10-20	6.1-7.0	0	0	
	2-6	27-35	5.0-15	6.1-7.0	0	0	
	6-12	27-35	5.0-15	6.1-7.0	0	0	
	12-20	30-50	5.0-15	6.1-7.0	0	0	
	20-26	30-50	5.0-15	6.1-7.0	0	0	
	26	---	---	---	0	0	
Boxrobber cobbly sandy clay loam----------	0-2	22-30	10-20	6.1-7.3	0	0	
	2-8	27-35	5.0-15	6.1-7.3	0	0	
	8-16	27-35	5.0-15	6.1-7.3	0	0	
	16-30	---	---	---	0	0	
	30	---	---	---	0	0	
665:							
Surnuf gravelly loam----------	0-1	---	---	---	0	0	
	1-4	22-30	20-32	6.1-7.3	0	0	
	4-9	27-40	15-30	6.1-7.3	0	0	
	9-16	27-40	15-30	6.1-7.3	0	0	
	16-27	35-55	15-30	6.1-7.3	0	0	
	27-29	35-55	15-30	6.1-7.3	0	0	
	29-56	35-55	15-30	5.6-7.0	0	0	
	56-72	35-55	15-30	5.6-7.0	0	0	
Bigridge loam----------	0-1	---	---	---	0	0	
	1-5	15-25	8.1-14	5.6-7.3	0	0	
	5-9	19-30	8.6-16	5.6-7.3	0	0	
	9-15	18-35	8.3-19	4.5-7.3	0	0	
	15-20	18-35	8.0-19	4.5-6.5	0	0	
	20-27	15-35	7.8-19	4.5-6.5	0	0	
	27-36	15-35	5.8-19	4.5-6.5	0	0	
	36-51	15-35	7.7-19	4.5-6.5	0	0	
	51-62	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	S
	In	Pct	meq/100g	pH	Pct	Pct	
666:							
Surnuf gravelly loam	0-1	---	---	---	0	0	
	1-4	22-30	20-32	6.1-7.3	0	0	
	4-9	27-40	15-30	6.1-7.3	0	0	
	9-16	27-40	15-30	6.1-7.3	0	0	
	16-27	35-55	15-30	6.1-7.3	0	0	
	27-29	35-55	15-30	6.1-7.3	0	0	
	29-56	35-55	15-30	5.6-7.0	0	0	
	56-72	35-55	15-30	5.6-7.0	0	0	
Bigridge loam	0-1	---	---	---	0	0	
	1-5	15-25	8.1-14	5.6-7.3	0	0	
	5-9	19-30	8.6-16	5.6-7.3	0	0	
	9-15	18-35	8.3-19	4.5-7.3	0	0	
	15-20	18-35	8.0-19	4.5-6.5	0	0	
	20-27	15-35	7.8-19	4.5-6.5	0	0	
	27-36	15-35	5.8-19	4.5-6.5	0	0	
	36-51	15-35	7.7-19	4.5-6.5	0	0	
	51-62	---	---	---	0	0	
667:							
Surnuf gravelly loam	0-1	---	---	---	0	0	
	1-4	22-30	20-32	6.1-7.3	0	0	
	4-9	27-40	15-30	6.1-7.3	0	0	
	9-16	27-40	15-30	6.1-7.3	0	0	
	16-27	35-55	15-30	6.1-7.3	0	0	
	27-29	35-55	15-30	6.1-7.3	0	0	
	29-56	35-55	15-30	5.6-7.0	0	0	
	56-72	35-55	15-30	5.6-7.0	0	0	
Bigridge loam	0-1	---	---	---	0	0	
	1-5	15-25	8.1-14	5.6-7.3	0	0	
	5-9	19-30	8.6-16	5.6-7.3	0	0	
	9-15	18-35	8.3-19	4.5-7.3	0	0	
	15-20	18-35	8.0-19	4.5-6.5	0	0	
	20-27	15-35	7.8-19	4.5-6.5	0	0	
	27-36	15-35	5.8-19	4.5-6.5	0	0	
	36-51	15-35	7.7-19	4.5-6.5	0	0	
	51-62	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
668:							
Surnuf gravelly loam----------	0-1	---	---	---	0	0	
	1-4	22-30	20-32	6.1-7.3	0	0	
	4-9	27-40	15-30	6.1-7.3	0	0	
	9-16	27-40	15-30	6.1-7.3	0	0	
	16-27	35-55	15-30	6.1-7.3	0	0	
	27-29	35-55	15-30	6.1-7.3	0	0	
	29-56	35-55	15-30	5.6-7.0	0	0	
	56-72	35-55	15-30	5.6-7.0	0	0	
Bigridge loam----------	0-1	---	---	---	0	0	
	1-5	15-25	8.1-14	5.6-7.3	0	0	
	5-9	19-30	8.6-16	5.6-7.3	0	0	
	9-15	18-35	8.3-19	4.5-7.3	0	0	
	15-20	18-35	8.0-19	4.5-6.5	0	0	
	20-27	15-35	7.8-19	4.5-6.5	0	0	
	27-36	15-35	5.8-19	4.5-6.5	0	0	
	36-51	15-35	7.7-19	4.5-6.5	0	0	
	51-62	---	---	---	0	0	
669:							
Oroshore gravelly loam----------	0-2	20-27	20-40	5.8-7.0	0	0	
	2-15	27-39	20-40	5.6-7.0	0	0	
	15-28	27-39	20-40	5.6-7.0	0	0	
	28-34	27-39	20-40	5.6-7.0	0	0	
	34	---	---	---	0	0	
Mounthope loam----------	0-1	---	---	---	0	0	
	1-3	17-25	14-21	5.6-7.3	0	0	
	3-7	20-27	17-23	5.6-6.5	0	0	
	7-15	20-27	17-24	5.6-6.5	0	0	
	15-22	27-35	22-28	5.6-6.5	0	0	
	22-26	27-35	21-29	5.6-6.5	0	0	
	26-31	27-35	21-32	5.6-6.5	0	0	
	31-42	27-35	20-32	5.6-6.5	0	0	
	42-52	20-35	13-28	5.6-6.5	0	0	
	52	---	---	---	0	0	
Dunstone gravelly loam----------	0-4	12-20	16-29	6.0-6.5	0	0	
	4-6	14-22	9.0-18	6.0-6.5	0	0	
	6-10	15-27	11-18	5.8-7.0	0	0	
	10-15	18-35	11-18	5.8-7.0	0	0	
	15-37	---	---	---	0	0	
	37	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	S
	In	Pct	meq/100g	pH	Pct	Pct	
670:							
Oroshore gravelly loam	0-2	20-27	20-40	5.8-7.0	0	0	
	2-15	27-39	20-40	5.6-7.0	0	0	
	15-28	27-39	20-40	5.6-7.0	0	0	
	28-34	27-39	20-40	5.6-7.0	0	0	
	34	---	---	---	0	0	
Mounthope loam	0-1	---	---	---	0	0	
	1-3	17-25	14-21	5.6-7.3	0	0	
	3-7	20-27	17-23	5.6-6.5	0	0	
	7-15	20-27	17-24	5.6-6.5	0	0	
	15-22	27-35	22-28	5.6-6.5	0	0	
	22-26	27-35	21-29	5.6-6.5	0	0	
	26-31	27-35	21-32	5.6-6.5	0	0	
	31-42	27-35	20-32	5.6-6.5	0	0	
	42-52	20-35	13-28	5.6-6.5	0	0	
	52	---	---	---	0	0	
Dunstone gravelly loam	0-4	12-20	16-29	6.0-6.5	0	0	
	4-6	14-22	9.0-18	6.0-6.5	0	0	
	6-10	15-27	11-18	5.8-7.0	0	0	
	10-15	18-35	11-18	5.8-7.0	0	0	
	15-37	---	---	---	0	0	
	37	---	---	---	0	0	
671:							
Oroshore gravelly loam	0-2	20-27	20-40	5.8-7.0	0	0	
	2-15	27-39	20-40	5.6-7.0	0	0	
	15-28	27-39	20-40	5.6-7.0	0	0	
	28-34	27-39	20-40	5.6-7.0	0	0	
	34	---	---	---	0	0	
Mounthope loam	0-1	---	---	---	0	0	
	1-3	17-25	14-21	5.6-7.3	0	0	
	3-7	20-27	17-23	5.6-6.5	0	0	
	7-15	20-27	17-24	5.6-6.5	0	0	
	15-22	27-35	22-28	5.6-6.5	0	0	
	22-26	27-35	21-29	5.6-6.5	0	0	
	26-31	27-35	21-32	5.6-6.5	0	0	
	31-42	27-35	20-32	5.6-6.5	0	0	
	42-52	20-35	13-28	5.6-6.5	0	0	
	52	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
671:							
Dunstone gravelly loam----------	0-4	12-20	16-29	6.0-6.5	0	0	
	4-6	14-22	9.0-18	6.0-6.5	0	0	
	6-10	15-27	11-18	5.8-7.0	0	0	
	10-15	18-35	11-18	5.8-7.0	0	0	
	15-37	---	---	---	0	0	
	37	---	---	---	0	0	
672:							
Oroshore gravelly loam----------	0-2	20-27	20-40	5.8-7.0	0	0	
	2-15	27-39	20-40	5.6-7.0	0	0	
	15-28	27-39	20-40	5.6-7.0	0	0	
	28-34	27-39	20-40	5.6-7.0	0	0	
	34	---	---	---	0	0	
Mounthope loam----------	0-1	---	---	---	0	0	
	1-3	17-25	14-21	5.6-7.3	0	0	
	3-7	20-27	17-23	5.6-6.5	0	0	
	7-15	20-27	17-24	5.6-6.5	0	0	
	15-22	27-35	22-28	5.6-6.5	0	0	
	22-26	27-35	21-29	5.6-6.5	0	0	
	26-31	27-35	21-32	5.6-6.5	0	0	
	31-42	27-35	20-32	5.6-6.5	0	0	
	42-52	20-35	13-28	5.6-6.5	0	0	
	52	---	---	---	0	0	
Dunstone gravelly loam----------	0-4	12-20	16-29	6.0-6.5	0	0	
	4-6	14-22	9.0-18	6.0-6.5	0	0	
	6-10	15-27	11-18	5.8-7.0	0	0	
	10-15	18-35	11-18	5.8-7.0	0	0	
	15-37	---	---	---	0	0	
	37	---	---	---	0	0	
674:							
Chawanakee gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-5	2-6	8.0-15	5.6-6.5	0	0	
	5-11	2-6	2.0-10	5.1-6.5	0	0	
	11-19	2-6	2.0-10	5.1-6.5	0	0	
	19	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
674:							
Bonneyridge sandy loam----------	0-1	---	---	---	0	0	
	1-3	5-15	7.9-28	5.6-7.3	0	0	
	3-6	5-15	7.9-28	5.6-7.3	0	0	
	6-16	5-18	4.5-24	5.1-6.5	0	0	
	16-22	5-18	4.5-24	5.1-6.5	0	0	
	22-31	5-18	4.5-24	5.1-6.5	0	0	
	31-39	5-18	4.5-24	5.1-6.5	0	0	
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	
Rock outcrop, quartz diorite.							
675:							
Clearhayes sandy clay loam----------	0-2	18-27	20-35	6.1-7.8	0	0	0
	2-10	17-35	20-30	6.6-8.5	0	0	0
	10-19	17-35	20-30	6.6-8.5	0	0	0
	19-28	2-30	1.0-10	7.4-8.5	0-1	0	0
	28-38	2-30	1.0-10	7.4-8.5	0-1	0	0
	38-46	2-30	1.0-10	7.4-8.5	0-1	0	0
	46	---	---	---	---	---	
Hamslough clay----------	0-3	40-60	40-50	6.6-7.8	0	0	0
	3-14	40-60	40-50	6.6-7.8	0	0	0
	14-19	40-60	40-50	7.4-8.4	0-5	0	0
	19-27	30-60	30-50	7.9-8.5	0-15	0	0
	27	---	---	---	0	0	0
676:							
Carhart clay----------	0-2	40-59	40-50	6.6-7.8	0	0	0
	2-12	40-59	40-50	6.6-8.5	0	0	0
	12-24	40-59	40-50	6.6-8.5	0-5	0	0
	24-30	40-59	40-50	6.6-8.5	0-15	0	0
	30	---	---	---	---	---	
Anita taxadjunct clay----------	0-2	40-60	40-50	6.3-8.0	0	0	0
	2-6	40-60	40-50	6.5-8.5	0	0	0
	6-11	40-60	40-50	6.5-8.5	0	0	0
	11	---	---	---	---	---	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
677:							
Tuscan gravelly loam----------	0-2	20-27	15-30	6.1-7.3	0	0	
	2-4	30-55	15-30	6.6-7.8	0	0	0
	4-7	30-55	15-30	6.6-7.8	0	0	0
	7-11	30-55	15-30	6.6-7.8	0	0	0
	11	---	---	---	0	0	
Fallager loam----------	0-1	20-30	15-25	6.1-6.5	0	0	
	1-3	35-40	15-25	6.1-7.3	0	0	
	3-7	40-60	15-25	6.6-8.4	0	0	0
	7	---	---	---	0	0	
Anita, gravelly duripan----------	0-3	40-60	40-50	6.3-8.0	0	0	0
	3-8	40-60	40-50	6.3-8.0	0	0	0
	8-15	40-60	40-50	6.3-8.0	0	0	0
	15	---	---	---	0-1	0	
679:							
Lucksev loam----------	0-2	22-35	15-30	6.1-7.3	0	0	
	2-7	30-50	15-30	6.6-7.8	0	0	
	7-15	30-50	15-30	6.6-7.8	0	0	
	15	---	---	---	0	0	
Butteside gravelly loam----------	0-2	22-38	15-30	6.1-7.8	0	0	
	2-8	30-50	15-30	6.1-8.5	0	0	
	8-13	30-50	15-30	6.1-8.5	0	0	
	13-27	30-50	15-30	6.1-8.5	0	0	
	27	---	---	---	0	0	
Carhart clay----------	0-2	40-59	40-50	6.6-7.8	0	0	0
	2-12	40-59	40-50	6.6-8.5	0	0	0
	12-24	40-59	40-50	6.6-8.5	0-5	0	0
	24-30	40-59	40-50	6.6-8.5	0-15	0	0
	30	---	---	---	---	---	
680:							
Lucksev loam----------	0-2	22-35	15-30	6.1-7.3	0	0	
	2-7	30-50	15-30	6.6-7.8	0	0	
	7-15	30-50	15-30	6.6-7.8	0	0	
	15	---	---	---	0	0	
Butteside gravelly loam----------	0-2	22-38	15-30	6.1-7.8	0	0	
	2-8	30-50	15-30	6.1-8.5	0	0	
	8-13	30-50	15-30	6.1-8.5	0	0	
	13-27	30-50	15-30	6.1-8.5	0	0	
	27	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
683:							
Typic Haploxeralfs, magnesic, low elevation	0-3	22-32	15-25	6.6-7.8	0	0	
	3-10	27-65	15-35	6.6-7.8	0	0	
	10-21	27-65	15-35	6.6-7.8	0	0	
	21-30	27-65	15-35	6.6-7.8	0	0	
	30	---	---	---	0	0	
Earlal very gravelly loam----------	0-3	20-27	10-20	6.6-7.3	0	0	
	3-7	30-40	5.0-15	6.6-7.3	0	0	
	7-14	30-40	5.0-15	6.6-7.3	0	0	
	14	---	---	---	0	0	
Rock outcrop, serpentinite.							
684:							
Typic Haploxeralfs, magnesic, low elevation	0-3	22-32	15-25	6.6-7.8	0	0	
	3-10	27-65	15-35	6.6-7.8	0	0	
	10-21	27-65	15-35	6.6-7.8	0	0	
	21-30	27-65	15-35	6.6-7.8	0	0	
	30	---	---	---	0	0	
Earlal very gravelly loam----------	0-3	20-27	10-20	6.6-7.3	0	0	
	3-7	30-40	5.0-15	6.6-7.3	0	0	
	7-14	30-40	5.0-15	6.6-7.3	0	0	
	14	---	---	---	0	0	
Rock outcrop, serpentinite.							
685:							
Bosquejo taxadjunct, gravelly substratum----	0-3	40-60	40-50	6.5-7.5	0	0	
	3-8	40-60	40-50	6.5-7.5	0	0	
	8-17	40-60	40-50	7.0-8.0	0	0	
	17-27	40-60	40-50	7.0-8.0	0	0	
	27-33	20-55	20-35	7.0-8.5	0	0	
	33-41	20-55	20-35	7.0-8.5	0	0	
	41-55	20-55	20-35	7.0-8.5	0	0	
	55-70	15-40	15-25	7.0-8.5	0	0	
	70-81	15-40	15-25	7.0-8.5	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
686:							
Redsluff taxadjunct clay loam----------	0-4	27-35	20-35	6.5-6.8	0	0	
	4-10	27-45	18-30	6.5-7.8	0	0	
	10-21	27-45	18-30	6.5-7.8	0	0	
	21-32	27-45	18-30	6.5-7.8	0	0	
	32-42	27-45	18-30	6.5-7.8	0	0	
	42-53	2-36	1.0-25	6.5-8.0	0	0	
	53-68	2-36	1.0-25	6.5-8.0	0	0	
	68-75	2-36	1.0-25	6.5-8.0	0	0	
	75-80	---	---	---	0	0	
687:							
Xerorthents, shallow----------	0-2	18-35	15-30	6.6-7.8	0	0	
	2-5	23-42	15-30	6.1-7.8	0	0	
	5-8	23-42	15-30	6.1-7.8	0	0	
	8	---	---	---	0	0	
Typic Haploxeralfs gravelly loam----------	0-2	20-30	15-30	6.1-7.8	0	0	
	2-8	27-50	15-30	6.6-7.8	0	0	
	8-16	27-50	15-30	6.6-7.8	0	0	
	16-27	27-50	15-30	6.6-7.8	0	0	
	27-40	27-50	15-30	6.6-7.8	0	0	
	40	---	---	---	0	0	
700:							
Retsongulch very gravelly sandy loam--------	0-1	---	---	---	0	0	
	1-3	10-22	10-20	5.6-6.5	0	0	
	3-12	12-26	5.0-15	4.5-6.5	0	0	
	12-21	12-26	5.0-15	4.5-6.5	0	0	
	21-30	12-26	5.0-15	4.5-6.5	0	0	
	30	---	---	---	0	0	
Flumewall gravelly sandy loam----------	0-0.5	---	---	---	0	0	
	0.5-2	12-20	10-20	5.6-6.5	0	0	
	2-7	14-27	10-20	5.1-6.5	0	0	
	7-18	14-27	10-20	5.1-6.5	0	0	
	18	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
701:							
Powellton gravelly loam----------	0-0.5	---	---	---	0	0	
	0.5-2	---	---	---	0	0	
	2-4	18-27	20-30	5.6-6.5	0	0	
	4-9	22-35	8.0-25	4.5-6.5	0	0	
	9-15	22-35	8.0-25	4.5-6.5	0	0	
	15-24	22-35	8.0-25	4.5-6.5	0	0	
	24-30	22-35	8.0-25	4.5-6.5	0	0	
	30-41	17-30	4.0-10	4.5-6.0	0	0	
	41-61	17-30	4.0-10	4.5-6.0	0	0	
	61-83	17-30	4.0-10	4.5-6.0	0	0	
Obstruction gravelly sandy loam----------	0-4	---	---	---	0	0	
	4-7	10-20	15-20	5.6-6.5	0	0	
	7-10	12-25	8.0-13	5.1-6.5	0	0	
	10-18	12-25	8.0-13	5.1-6.5	0	0	
	18-25	12-25	8.0-13	5.1-6.5	0	0	
	25-33	12-25	8.0-13	5.1-6.5	0	0	
	33-44	5-20	6.0-11	4.5-6.5	0	0	
	44-64	5-20	6.0-11	4.5-6.5	0	0	
	64-84	5-20	6.0-11	4.5-6.5	0	0	
	84	---	---	---	0	0	
702:							
Cerpone gravelly loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-4	16-22	10-20	5.6-6.5	0	0	
	4-9	20-27	5.0-15	5.6-6.5	0	0	
	9-17	20-27	5.0-15	5.6-6.5	0	0	
	17-26	25-35	5.0-15	6.1-7.3	0	0	
	26-41	25-35	5.0-15	6.1-7.3	0	0	
	41-57	25-35	5.0-15	6.1-7.3	0	0	
	57	---	---	---	0	0	
Typic Haploxeralfs, magnesic, very gravelly loam----------	0-3	22-32	15-25	6.6-7.3	0	0	
	3-7	27-45	15-30	6.6-7.8	0	0	
	7-12	27-45	15-30	6.6-7.8	0	0	
	12-18	27-45	15-30	6.6-7.8	0	0	
	18-24	27-45	15-30	6.6-7.8	0	0	
	24-32	35-50	18-30	6.6-7.8	0	0	
	32-42	35-50	18-30	6.6-7.8	0	0	
	42-54	35-50	18-30	6.6-7.8	0	0	
	54	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
702:							
Earlal very gravelly loam----------	0-3	20-27	10-20	6.6-7.3	0	0	
	3-7	30-40	5.0-15	6.6-7.3	0	0	
	7-14	30-40	5.0-15	6.6-7.3	0	0	
	14	---	---	---	0	0	
703:							
Cerpone gravelly loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-4	16-22	10-20	5.6-6.5	0	0	
	4-9	20-27	5.0-15	5.6-6.5	0	0	
	9-17	20-27	5.0-15	5.6-6.5	0	0	
	17-26	25-35	5.0-15	6.1-7.3	0	0	
	26-41	25-35	5.0-15	6.1-7.3	0	0	
	41-57	25-35	5.0-15	6.1-7.3	0	0	
	57	---	---	---	0	0	
Typic Haploxeralfs, magnesic, very gravelly loam----------	0-3	22-32	15-25	6.6-7.3	0	0	
	3-7	27-45	15-30	6.6-7.8	0	0	
	7-12	27-45	15-30	6.6-7.8	0	0	
	12-18	27-45	15-30	6.6-7.8	0	0	
	18-24	27-45	15-30	6.6-7.8	0	0	
	24-32	35-50	18-30	6.6-7.8	0	0	
	32-42	35-50	18-30	6.6-7.8	0	0	
	42-54	35-50	18-30	6.6-7.8	0	0	
	54	---	---	---	0	0	
Earlal very gravelly loam----------	0-3	20-27	10-20	6.6-7.3	0	0	
	3-7	30-40	5.0-15	6.6-7.3	0	0	
	7-14	30-40	5.0-15	6.6-7.3	0	0	
	14	---	---	---	0	0	
Rock outcrop, serpentinite.							
704:							
Typic Haploxeralfs, magnesic, very gravelly loam----------	0-3	22-32	15-25	6.6-7.3	0	0	
	3-7	27-45	15-30	6.6-7.8	0	0	
	7-12	27-45	15-30	6.6-7.8	0	0	
	12-18	27-45	15-30	6.6-7.8	0	0	
	18-24	27-45	15-30	6.6-7.8	0	0	
	24-32	35-50	18-30	6.6-7.8	0	0	
	32-42	35-50	18-30	6.6-7.8	0	0	
	42-54	35-50	18-30	6.6-7.8	0	0	
	54	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	S
	In	Pct	meq/100g	pH	Pct	Pct	
704:							
Earlal very gravelly loam----------	0-3	20-27	10-20	6.6-7.3	0	0	
	3-7	30-40	5.0-15	6.6-7.3	0	0	
	7-14	30-40	5.0-15	6.6-7.3	0	0	
	14	---	---	---	0	0	
Cerpone gravelly loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-4	16-22	10-20	5.6-6.5	0	0	
	4-9	20-27	5.0-15	5.6-6.5	0	0	
	9-17	20-27	5.0-15	5.6-6.5	0	0	
	17-26	25-35	5.0-15	6.1-7.3	0	0	
	26-41	25-35	5.0-15	6.1-7.3	0	0	
	41-57	25-35	5.0-15	6.1-7.3	0	0	
	57	---	---	---	0	0	
Rock outcrop, serpentinite.							
705:							
Typic Haploxeralfs, magnesic, very gravelly loam----------	0-3	22-32	15-25	6.6-7.3	0	0	
	3-7	27-45	15-30	6.6-7.8	0	0	
	7-12	27-45	15-30	6.6-7.8	0	0	
	12-18	27-45	15-30	6.6-7.8	0	0	
	18-24	27-45	15-30	6.6-7.8	0	0	
	24-32	35-50	18-30	6.6-7.8	0	0	
	32-42	35-50	18-30	6.6-7.8	0	0	
	42-54	35-50	18-30	6.6-7.8	0	0	
	54	---	---	---	0	0	
Earlal very gravelly loam----------	0-3	20-27	10-20	6.6-7.3	0	0	
	3-7	30-40	5.0-15	6.6-7.3	0	0	
	7-14	30-40	5.0-15	6.6-7.3	0	0	
	14	---	---	---	0	0	
Cerpone gravelly loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-4	16-22	10-20	5.6-6.5	0	0	
	4-9	20-27	5.0-15	5.6-6.5	0	0	
	9-17	20-27	5.0-15	5.6-6.5	0	0	
	17-26	25-35	5.0-15	6.1-7.3	0	0	
	26-41	25-35	5.0-15	6.1-7.3	0	0	
	41-57	25-35	5.0-15	6.1-7.3	0	0	
	57	---	---	---	0	0	
Rock outcrop, serpentinite.							

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
711:							
Dixmine very gravelly loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-6	18-27	20-30	5.6-6.5	0	0	
	6-11	20-30	15-25	5.1-6.5	0	0	
	11-17	20-30	15-25	5.1-6.5	0	0	
	17-30	27-35	15-20	4.5-6.0	0	0	
	30-41	27-35	15-20	4.5-6.0	0	0	
	41-54	27-35	15-20	4.5-6.0	0	0	
	54	---	---	---	0	0	
Toadtown loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-5	20-27	20-30	5.6-6.5	0	0	
	5-8	25-35	12-20	5.1-6.5	0	0	
	8-13	25-35	12-20	5.1-6.5	0	0	
	13-18	35-45	9.0-12	5.1-6.5	0	0	
	18-27	35-45	9.0-12	5.1-6.5	0	0	
	27-51	18-35	5.0-12	5.1-6.0	0	0	
	51-65	18-35	5.0-12	5.1-6.0	0	0	
	65-75	18-35	5.0-12	5.1-6.0	0	0	
	75-79	---	---	5.1-6.0	0	0	
712:							
Dixmine very gravelly loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-6	18-27	20-30	5.6-6.5	0	0	
	6-11	20-30	15-25	5.1-6.5	0	0	
	11-17	20-30	15-25	5.1-6.5	0	0	
	17-30	27-35	15-20	4.5-6.0	0	0	
	30-41	27-35	15-20	4.5-6.0	0	0	
	41-54	27-35	15-20	4.5-6.0	0	0	
	54	---	---	---	0	0	
Toadtown loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-5	20-27	20-30	5.6-6.5	0	0	
	5-8	25-35	12-20	5.1-6.5	0	0	
	8-13	25-35	12-20	5.1-6.5	0	0	
	13-18	35-45	9.0-12	5.1-6.5	0	0	
	18-27	35-45	9.0-12	5.1-6.5	0	0	
	27-51	18-35	5.0-12	5.1-6.0	0	0	
	51-65	18-35	5.0-12	5.1-6.0	0	0	
	65-75	18-35	5.0-12	5.1-6.0	0	0	
	75-79	---	---	5.1-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
713:							
Dixmine very gravelly loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-6	18-27	20-30	5.6-6.5	0	0	
	6-11	20-30	15-25	5.1-6.5	0	0	
	11-17	20-30	15-25	5.1-6.5	0	0	
	17-30	27-35	15-20	4.5-6.0	0	0	
	30-41	27-35	15-20	4.5-6.0	0	0	
	41-54	27-35	15-20	4.5-6.0	0	0	
	54	---	---	---	0	0	
Toadtown loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-5	20-27	20-30	5.6-6.5	0	0	
	5-8	25-35	12-20	5.1-6.5	0	0	
	8-13	25-35	12-20	5.1-6.5	0	0	
	13-18	35-45	9.0-12	5.1-6.5	0	0	
	18-27	35-45	9.0-12	5.1-6.5	0	0	
	27-51	18-35	5.0-12	5.1-6.0	0	0	
	51-65	18-35	5.0-12	5.1-6.0	0	0	
	65-75	18-35	5.0-12	5.1-6.0	0	0	
	75-79	---	---	5.1-6.0	0	0	
714:							
Dixmine very gravelly loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-6	18-27	20-30	5.6-6.5	0	0	
	6-11	20-30	15-25	5.1-6.5	0	0	
	11-17	20-30	15-25	5.1-6.5	0	0	
	17-30	27-35	15-20	4.5-6.0	0	0	
	30-41	27-35	15-20	4.5-6.0	0	0	
	41-54	27-35	15-20	4.5-6.0	0	0	
	54	---	---	---	0	0	
Toadtown loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-5	20-27	20-30	5.6-6.5	0	0	
	5-8	25-35	12-20	5.1-6.5	0	0	
	8-13	25-35	12-20	5.1-6.5	0	0	
	13-18	35-45	9.0-12	5.1-6.5	0	0	
	18-27	35-45	9.0-12	5.1-6.5	0	0	
	27-51	18-35	5.0-12	5.1-6.0	0	0	
	51-65	18-35	5.0-12	5.1-6.0	0	0	
	65-75	18-35	5.0-12	5.1-6.0	0	0	
	75-79	---	---	5.1-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
715:							
Logtrain gravelly loam----------	0-1	---	---	---	0	0	
	1-3	10-22	25-40	5.0-6.5	0	0	
	3-9	12-27	5.0-20	4.4-6.5	0	0	
	9-21	12-27	5.0-20	4.4-6.5	0	0	
	21-38	12-27	5.0-20	4.4-6.5	0	0	
	38-54	12-27	5.0-20	4.4-6.5	0	0	
	54	---	---	---	0	0	
Bottlehill very gravelly loam----------	0-0.5	---	---	---	0	0	
	0.5-2	---	---	---	0	0	
	2-4	10-20	25-40	5.1-6.5	0	0	
	4-9	10-20	25-40	5.1-6.5	0	0	
	9-13	15-27	10-25	4.5-6.5	0	0	
	13-22	15-27	10-25	4.5-6.5	0	0	
	22-33	18-35	5.0-15	4.5-6.5	0	0	
	33	---	---	---	0	0	
Walkermine very gravelly loam----------	0-1	---	---	---	0	0	
	1-3	12-26	25-35	6.1-7.0	0	0	
	3-12	12-26	10-25	5.6-6.8	0	0	
	12	---	---	---	0	0	
716:							
Griffgulch very gravelly silt loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-7	18-27	20-30	5.6-6.5	0	0	
	7-11	27-35	15-25	5.6-6.5	0	0	
	11-20	27-35	15-25	5.6-6.5	0	0	
	20-33	35-50	15-25	5.6-6.5	0	0	
	33-47	35-50	15-25	5.6-6.5	0	0	
	47-58	35-50	15-25	5.6-6.5	0	0	
	58	---	---	---	0	0	
Surnuf gravelly loam----------	0-1	---	---	---	0	0	
	1-4	22-30	20-32	6.1-7.3	0	0	
	4-9	27-40	15-30	6.1-7.3	0	0	
	9-16	27-40	15-30	6.1-7.3	0	0	
	16-27	35-55	15-30	6.1-7.3	0	0	
	27-29	35-55	15-30	6.1-7.3	0	0	
	29-56	35-55	15-30	5.6-7.0	0	0	
	56-72	35-55	15-30	5.6-7.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
717:							
Griffgulch very gravelly silt loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-7	18-27	20-30	5.6-6.5	0	0	
	7-11	27-35	15-25	5.6-6.5	0	0	
	11-20	27-35	15-25	5.6-6.5	0	0	
	20-33	35-50	15-25	5.6-6.5	0	0	
	33-47	35-50	15-25	5.6-6.5	0	0	
	47-58	35-50	15-25	5.6-6.5	0	0	
	58	---	---	---	0	0	
Surnuf gravelly loam----------	0-1	---	---	---	0	0	
	1-4	22-30	20-32	6.1-7.3	0	0	
	4-9	27-40	15-30	6.1-7.3	0	0	
	9-16	27-40	15-30	6.1-7.3	0	0	
	16-27	35-55	15-30	6.1-7.3	0	0	
	27-29	35-55	15-30	6.1-7.3	0	0	
	29-56	35-55	15-30	5.6-7.0	0	0	
	56-72	35-55	15-30	5.6-7.0	0	0	
718:							
Griffgulch very gravelly silt loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-7	18-27	20-30	5.6-6.5	0	0	
	7-11	27-35	15-25	5.6-6.5	0	0	
	11-20	27-35	15-25	5.6-6.5	0	0	
	20-33	35-50	15-25	5.6-6.5	0	0	
	33-47	35-50	15-25	5.6-6.5	0	0	
	47-58	35-50	15-25	5.6-6.5	0	0	
	58	---	---	---	0	0	
Surnuf gravelly loam----------	0-1	---	---	---	0	0	
	1-4	22-30	20-32	6.1-7.3	0	0	
	4-9	27-40	15-30	6.1-7.3	0	0	
	9-16	27-40	15-30	6.1-7.3	0	0	
	16-27	35-55	15-30	6.1-7.3	0	0	
	27-29	35-55	15-30	6.1-7.3	0	0	
	29-56	35-55	15-30	5.6-7.0	0	0	
	56-72	35-55	15-30	5.6-7.0	0	0	
Spine taxadjunct very cobbly loam----------	0-2	18-27	20-30	6.1-7.3	0	0	
	2-15	22-35	15-25	6.1-6.5	0	0	
	15	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
719:							
Griffgulch very gravelly silt loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-7	18-27	20-30	5.6-6.5	0	0	
	7-11	27-35	15-25	5.6-6.5	0	0	
	11-20	27-35	15-25	5.6-6.5	0	0	
	20-33	35-50	15-25	5.6-6.5	0	0	
	33-47	35-50	15-25	5.6-6.5	0	0	
	47-58	35-50	15-25	5.6-6.5	0	0	
	58	---	---	---	0	0	
Surnuf gravelly loam----------	0-1	---	---	---	0	0	
	1-4	22-30	20-32	6.1-7.3	0	0	
	4-9	27-40	15-30	6.1-7.3	0	0	
	9-16	27-40	15-30	6.1-7.3	0	0	
	16-27	35-55	15-30	6.1-7.3	0	0	
	27-29	35-55	15-30	6.1-7.3	0	0	
	29-56	35-55	15-30	5.6-7.0	0	0	
	56-72	35-55	15-30	5.6-7.0	0	0	
Spine taxadjunct very cobbly loam----------	0-2	18-27	20-30	6.1-7.3	0	0	
	2-15	22-35	15-25	6.1-6.5	0	0	
	15	---	---	---	0	0	
720:							
Dystroxerepts extremely gravelly loam-------	0-1	---	---	---	0	0	
	1-4	12-27	15-25	6.1-7.3	0	0	
	4-12	10-30	10-20	5.1-7.3	0	0	
	12-22	10-30	10-20	5.1-7.3	0	0	
	22-28	10-30	10-20	5.1-7.3	0	0	
	28-38	10-30	10-20	5.1-7.3	0	0	
	38	---	---	---	0	0	
Haploxeralfs very gravelly loam----------	0-0.5	---	---	---	0	0	
	0.5-4	17-27	15-25	6.1-7.0	0	0	
	4-9	20-40	15-25	5.1-7.0	0	0	
	9-13	20-40	15-25	5.1-7.0	0	0	
	13-22	20-40	15-25	5.1-7.0	0	0	
	22-31	20-40	15-25	5.1-7.0	0	0	
	31-47	20-40	15-25	5.1-7.0	0	0	
	47	---	---	---	0	0	
Rock outcrop, metavolcanic.							

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
721:							
Haploxerands, granitic till, medial sandy loam	0-2	---	---	---	0	0	
	2-5	4-8	10-20	5.6-6.5	0	0	
	5-12	4-8	10-20	5.6-6.5	0	0	
	12-22	3-6	4.0-12	5.6-6.5	0	0	
	22-41	1-5	2.0-8.0	4.5-6.5	0	0	
	41-55	1-5	2.0-8.0	4.5-6.5	0	0	
	55-74	1-5	2.0-8.0	4.5-6.5	0	0	
	74-87	1-5	2.0-8.0	4.5-6.5	0	0	
722:							
Haploxerands, granitic till, medial sandy loam	0-2	---	---	---	0	0	
	2-5	4-8	10-20	5.6-6.5	0	0	
	5-12	4-8	10-20	5.6-6.5	0	0	
	12-22	3-6	4.0-12	5.6-6.5	0	0	
	22-41	1-5	2.0-8.0	4.5-6.5	0	0	
	41-55	1-5	2.0-8.0	4.5-6.5	0	0	
	55-74	1-5	2.0-8.0	4.5-6.5	0	0	
	74-87	1-5	2.0-8.0	4.5-6.5	0	0	
723:							
Haploxerands, granitic till, medial sandy loam	0-2	---	---	---	0	0	
	2-5	4-8	10-20	5.6-6.5	0	0	
	5-12	4-8	10-20	5.6-6.5	0	0	
	12-22	3-6	4.0-12	5.6-6.5	0	0	
	22-41	1-5	2.0-8.0	4.5-6.5	0	0	
	41-55	1-5	2.0-8.0	4.5-6.5	0	0	
	55-74	1-5	2.0-8.0	4.5-6.5	0	0	
	74-87	1-5	2.0-8.0	4.5-6.5	0	0	
724:							
Haploxerands, volcanic till, cobbly medial sandy loam	0-2	---	---	---	0	0	
	2-4	6-12	25-35	5.6-7.0	0	0	
	4-17	8-14	15-25	5.6-6.5	0	0	
	17-37	10-22	10-20	5.1-6.5	0	0	
	37-41	10-22	10-20	5.1-6.5	0	0	
	41-52	2-8	1.0-5.0	4.5-7.0	0	0	
	52-80	2-8	1.0-5.0	4.5-7.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
725:							
Haploxerands, volcanic till, cobbly medial sandy loam----------	0-2	---	---	---	0	0	
	2-4	6-12	25-35	5.6-7.0	0	0	
	4-17	8-14	15-25	5.6-6.5	0	0	
	17-37	10-22	10-20	5.1-6.5	0	0	
	37-41	10-22	10-20	5.1-6.5	0	0	
	41-52	2-8	1.0-5.0	4.5-7.0	0	0	
	52-80	2-8	1.0-5.0	4.5-7.0	0	0	
726:							
Haploxerands, volcanic till, cobbly medial sandy loam----------	0-2	---	---	---	0	0	
	2-4	6-12	25-35	5.6-7.0	0	0	
	4-17	8-14	15-25	5.6-6.5	0	0	
	17-37	10-22	10-20	5.1-6.5	0	0	
	37-41	10-22	10-20	5.1-6.5	0	0	
	41-52	2-8	1.0-5.0	4.5-7.0	0	0	
	52-80	2-8	1.0-5.0	4.5-7.0	0	0	
727:							
Bonneyridge sandy loam----------	0-1	---	---	---	0	0	
	1-3	5-15	7.9-28	5.6-7.3	0	0	
	3-6	5-15	7.9-28	5.6-7.3	0	0	
	6-16	5-18	4.5-24	5.1-6.5	0	0	
	16-22	5-18	4.5-24	5.1-6.5	0	0	
	22-31	5-18	4.5-24	5.1-6.5	0	0	
	31-39	5-18	4.5-24	5.1-6.5	0	0	
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	
728:							
Bonneyridge sandy loam----------	0-1	---	---	---	0	0	
	1-3	5-15	7.9-28	5.6-7.3	0	0	
	3-6	5-15	7.9-28	5.6-7.3	0	0	
	6-16	5-18	4.5-24	5.1-6.5	0	0	
	16-22	5-18	4.5-24	5.1-6.5	0	0	
	22-31	5-18	4.5-24	5.1-6.5	0	0	
	31-39	5-18	4.5-24	5.1-6.5	0	0	
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
729:							
Bonneyridge sandy loam----------	0-1	---	---	---	0	0	
	1-3	5-15	7.9-28	5.6-7.3	0	0	
	3-6	5-15	7.9-28	5.6-7.3	0	0	
	6-16	5-18	4.5-24	5.1-6.5	0	0	
	16-22	5-18	4.5-24	5.1-6.5	0	0	
	22-31	5-18	4.5-24	5.1-6.5	0	0	
	31-39	5-18	4.5-24	5.1-6.5	0	0	
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	
730:							
Tusccoll gravelly loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-6	17-25	20-30	6.1-7.0	0	0	
	6-14	20-39	15-25	5.0-6.8	0	0	
	14-23	20-39	10-20	5.0-6.8	0	0	
	23-33	20-39	10-20	5.0-6.8	0	0	
	33-41	20-39	10-20	5.0-6.8	0	0	
	41-49	20-39	10-20	5.0-6.8	0	0	
	49-70	20-39	10-20	5.0-6.8	0	0	
Schott very gravelly loam----------	0-2	---	---	---	0	0	
	2-6	15-25	20-30	6.1-7.0	0	0	
	6-13	18-35	15-25	5.1-6.5	0	0	
	13-22	18-35	10-20	5.1-6.5	0	0	
	22-40	18-35	10-20	5.1-6.5	0	0	
	40-50	18-35	10-20	5.1-6.5	0	0	
	50	---	---	---	0	0	
731:							
Tusccoll gravelly loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-6	17-25	20-30	6.1-7.0	0	0	
	6-14	20-39	15-25	5.0-6.8	0	0	
	14-23	20-39	10-20	5.0-6.8	0	0	
	23-33	20-39	10-20	5.0-6.8	0	0	
	33-41	20-39	10-20	5.0-6.8	0	0	
	41-49	20-39	10-20	5.0-6.8	0	0	
	49-70	20-39	10-20	5.0-6.8	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
731:							
Schott very gravelly loam----------	0-2	---	---	---	0	0	
	2-6	15-25	20-30	6.1-7.0	0	0	
	6-13	18-35	15-25	5.1-6.5	0	0	
	13-22	18-35	10-20	5.1-6.5	0	0	
	22-40	18-35	10-20	5.1-6.5	0	0	
	40-50	18-35	10-20	5.1-6.5	0	0	
	50	---	---	---	0	0	
732:							
Bonepile taxadjunct, duripan substratum-----	0-1	---	---	---	0	0	
	1-4	10-20	25-40	5.1-6.5	0	0	
	4-7	10-20	25-40	5.1-6.5	0	0	
	7-15	10-20	20-35	5.1-6.5	0	0	
	15-30	10-25	15-25	5.6-7.3	0	0	
	30-37	10-25	15-25	5.6-7.3	0	0	
	37-47	15-35	15-25	5.6-7.3	0	0	
	47	---	---	---	0	0	
733:							
Haploxeralfs, terrace, gravelly loam--------	0-5	15-26	15-25	6.1-7.3	0	0	
	5-11	18-35	10-20	5.6-7.0	0	0	
	11-18	18-35	10-20	5.6-7.0	0	0	
	18-32	18-35	10-20	5.6-7.0	0	0	
	32-48	18-35	10-20	5.6-7.0	0	0	
	48-63	18-35	10-20	5.6-7.0	0	0	
734:							
Haploxerands medial sandy loam----------	0-0.5	---	---	---	0	0	
	0.5-2	3-18	10-20	5.6-6.5	0	0	
	2-5	3-18	10-20	5.6-6.5	0	0	
	5-12	1-20	2.0-10	4.5-6.5	0	0	
	12-23	1-20	2.0-10	4.5-6.5	0	0	
	23-30	1-20	2.0-10	4.5-6.5	0	0	
	30-42	1-20	2.0-10	4.5-6.5	0	0	
	42-60	1-20	2.0-10	4.5-6.5	0	0	
	60-80	1-20	2.0-10	4.5-6.5	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
734:							
Aquic Xerofluvents peaty very fine sandy loam----------	0-3	2-6	10-20	6.1-6.5	0	0	
	3-7	2-6	10-20	6.1-6.5	0	0	
	7-16	2-6	1.0-4.0	6.1-6.5	0	0	
	16-19	2-6	10-20	6.1-6.5	0	0	
	19-23	2-6	1.0-4.0	6.1-6.5	0	0	
	23-35	2-6	10-20	6.1-6.5	0	0	
	35-49	2-6	1.0-4.0	6.1-6.5	0	0	
	49-63	2-6	10-20	6.1-6.5	0	0	
	63-71	2-6	1.0-4.0	6.1-6.5	0	0	
	71-80	2-6	10-20	6.1-6.5	0	0	
735:							
Fluvaquents, loamy----------	0-0.5	---	---	---	0	0	
	0.5-2	12-27	18-30	6.1-7.3	0	0	
	2-9	12-27	18-30	6.1-7.3	0	0	
	9-18	12-27	15-25	6.1-7.3	0	0	
	18-24	12-27	15-25	6.1-7.3	0	0	
	24-27	10-20	10-20	6.1-7.3	0	0	
	27-37	10-20	10-20	6.1-7.3	0	0	
	37-45	12-27	18-30	6.1-7.3	0	0	
	45-65	12-27	18-30	6.1-7.3	0	0	
	65-70	12-27	18-30	6.1-7.3	0	0	
	70-85	5-30	10-20	6.1-7.3	0	0	
801:							
Obstruction gravelly sandy loam----------	0-4	---	---	---	0	0	
	4-7	10-20	15-20	5.6-6.5	0	0	
	7-10	12-25	8.0-13	5.1-6.5	0	0	
	10-18	12-25	8.0-13	5.1-6.5	0	0	
	18-25	12-25	8.0-13	5.1-6.5	0	0	
	25-33	12-25	8.0-13	5.1-6.5	0	0	
	33-44	5-20	6.0-11	4.5-6.5	0	0	
	44-64	5-20	6.0-11	4.5-6.5	0	0	
	64-84	5-20	6.0-11	4.5-6.5	0	0	
	84	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
802:							
Obskel very gravelly sandy loam----------	0-0.5	---	---	---	0	0	
	0.5-1	---	---	---	0	0	
	1-4	8-16	12-20	5.6-6.5	0	0	
	4-9	10-24	6.0-15	4.5-6.5	0	0	
	9-19	10-24	6.0-15	4.5-6.5	0	0	
	19-30	10-24	6.0-15	4.5-6.5	0	0	
	30-56	10-24	6.0-15	4.5-6.5	0	0	
	56	---	---	---	0	0	
Obstruction gravelly sandy loam----------	0-4	---	---	---	0	0	
	4-7	10-20	15-20	5.6-6.5	0	0	
	7-10	12-25	8.0-13	5.1-6.5	0	0	
	10-18	12-25	8.0-13	5.1-6.5	0	0	
	18-25	12-25	8.0-13	5.1-6.5	0	0	
	25-33	12-25	8.0-13	5.1-6.5	0	0	
	33-44	5-20	6.0-11	4.5-6.5	0	0	
	44-64	5-20	6.0-11	4.5-6.5	0	0	
	64-84	5-20	6.0-11	4.5-6.5	0	0	
	84	---	---	---	0	0	
803:							
Obskel very gravelly sandy loam----------	0-0.5	---	---	---	0	0	
	0.5-1	---	---	---	0	0	
	1-4	8-16	12-20	5.6-6.5	0	0	
	4-9	10-24	6.0-15	4.5-6.5	0	0	
	9-19	10-24	6.0-15	4.5-6.5	0	0	
	19-30	10-24	6.0-15	4.5-6.5	0	0	
	30-56	10-24	6.0-15	4.5-6.5	0	0	
	56	---	---	---	0	0	
Obstruction gravelly sandy loam----------	0-4	---	---	---	0	0	
	4-7	10-20	15-20	5.6-6.5	0	0	
	7-10	12-25	8.0-13	5.1-6.5	0	0	
	10-18	12-25	8.0-13	5.1-6.5	0	0	
	18-25	12-25	8.0-13	5.1-6.5	0	0	
	25-33	12-25	8.0-13	5.1-6.5	0	0	
	33-44	5-20	6.0-11	4.5-6.5	0	0	
	44-64	5-20	6.0-11	4.5-6.5	0	0	
	64-84	5-20	6.0-11	4.5-6.5	0	0	
	84	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
804:							
Obskel very gravelly sandy loam----------	0-0.5	---	---	---	0	0	
	0.5-1	---	---	---	0	0	
	1-4	8-16	12-20	5.6-6.5	0	0	
	4-9	10-24	6.0-15	4.5-6.5	0	0	
	9-19	10-24	6.0-15	4.5-6.5	0	0	
	19-30	10-24	6.0-15	4.5-6.5	0	0	
	30-56	10-24	6.0-15	4.5-6.5	0	0	
	56	---	---	---	0	0	
Obstruction gravelly sandy loam----------	0-4	---	---	---	0	0	
	4-7	10-20	15-20	5.6-6.5	0	0	
	7-10	12-25	8.0-13	5.1-6.5	0	0	
	10-18	12-25	8.0-13	5.1-6.5	0	0	
	18-25	12-25	8.0-13	5.1-6.5	0	0	
	25-33	12-25	8.0-13	5.1-6.5	0	0	
	33-44	5-20	6.0-11	4.5-6.5	0	0	
	44-64	5-20	6.0-11	4.5-6.5	0	0	
	64-84	5-20	6.0-11	4.5-6.5	0	0	
	84	---	---	---	0	0	
Retsongulch very gravelly sandy loam--------	0-1	---	---	---	0	0	
	1-3	10-22	10-20	5.6-6.5	0	0	
	3-12	12-26	5.0-15	4.5-6.5	0	0	
	12-21	12-26	5.0-15	4.5-6.5	0	0	
	21-30	12-26	5.0-15	4.5-6.5	0	0	
	30	---	---	---	0	0	
805:							
Bottlehill very gravelly loam----------	0-0.5	---	---	---	0	0	
	0.5-2	---	---	---	0	0	
	2-4	10-20	25-40	5.1-6.5	0	0	
	4-9	10-20	25-40	5.1-6.5	0	0	
	9-13	15-27	10-25	4.5-6.5	0	0	
	13-22	15-27	10-25	4.5-6.5	0	0	
	22-33	18-35	5.0-15	4.5-6.5	0	0	
	33	---	---	---	0	0	
Walkermine very gravelly loam----------	0-1	---	---	---	0	0	
	1-3	12-26	25-35	6.1-7.0	0	0	
	3-12	12-26	10-25	5.6-6.8	0	0	
	12	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
805:							
Logtrain gravelly loam----------	0-1	---	---	---	0	0	
	1-3	10-22	25-40	5.0-6.5	0	0	
	3-9	12-27	5.0-20	4.4-6.5	0	0	
	9-21	12-27	5.0-20	4.4-6.5	0	0	
	21-38	12-27	5.0-20	4.4-6.5	0	0	
	38-54	12-27	5.0-20	4.4-6.5	0	0	
	54	---	---	---	0	0	
806:							
Bottlehill very gravelly loam----------	0-0.5	---	---	---	0	0	
	0.5-2	---	---	---	0	0	
	2-4	10-20	25-40	5.1-6.5	0	0	
	4-9	10-20	25-40	5.1-6.5	0	0	
	9-13	15-27	10-25	4.5-6.5	0	0	
	13-22	15-27	10-25	4.5-6.5	0	0	
	22-33	18-35	5.0-15	4.5-6.5	0	0	
	33	---	---	---	0	0	
Walkermine very gravelly loam----------	0-1	---	---	---	0	0	
	1-3	12-26	25-35	6.1-7.0	0	0	
	3-12	12-26	10-25	5.6-6.8	0	0	
	12	---	---	---	0	0	
Logtrain gravelly loam----------	0-1	---	---	---	0	0	
	1-3	10-22	25-40	5.0-6.5	0	0	
	3-9	12-27	5.0-20	4.4-6.5	0	0	
	9-21	12-27	5.0-20	4.4-6.5	0	0	
	21-38	12-27	5.0-20	4.4-6.5	0	0	
	38-54	12-27	5.0-20	4.4-6.5	0	0	
	54	---	---	---	0	0	
807:							
Bottlehill very gravelly loam----------	0-0.5	---	---	---	0	0	
	0.5-2	---	---	---	0	0	
	2-4	10-20	25-40	5.1-6.5	0	0	
	4-9	10-20	25-40	5.1-6.5	0	0	
	9-13	15-27	10-25	4.5-6.5	0	0	
	13-22	15-27	10-25	4.5-6.5	0	0	
	22-33	18-35	5.0-15	4.5-6.5	0	0	
	33	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
807:							
Logtrain gravelly loam----------	0-1	---	---	---	0	0	
	1-3	10-22	25-40	5.0-6.5	0	0	
	3-9	12-27	5.0-20	4.4-6.5	0	0	
	9-21	12-27	5.0-20	4.4-6.5	0	0	
	21-38	12-27	5.0-20	4.4-6.5	0	0	
	38-54	12-27	5.0-20	4.4-6.5	0	0	
	54	---	---	---	0	0	
Walkermine very gravelly loam----------	0-1	---	---	---	0	0	
	1-3	12-26	25-35	6.1-7.0	0	0	
	3-12	12-26	10-25	5.6-6.8	0	0	
	12	---	---	---	0	0	
808:							
Bottlehill very gravelly loam----------	0-0.5	---	---	---	0	0	
	0.5-2	---	---	---	0	0	
	2-4	10-20	25-40	5.1-6.5	0	0	
	4-9	10-20	25-40	5.1-6.5	0	0	
	9-13	15-27	10-25	4.5-6.5	0	0	
	13-22	15-27	10-25	4.5-6.5	0	0	
	22-33	18-35	5.0-15	4.5-6.5	0	0	
	33	---	---	---	0	0	
Walkermine very gravelly loam----------	0-1	---	---	---	0	0	
	1-3	12-26	25-35	6.1-7.0	0	0	
	3-12	12-26	10-25	5.6-6.8	0	0	
	12	---	---	---	0	0	
Logtrain gravelly loam----------	0-1	---	---	---	0	0	
	1-3	10-22	25-40	5.0-6.5	0	0	
	3-9	12-27	5.0-20	4.4-6.5	0	0	
	9-21	12-27	5.0-20	4.4-6.5	0	0	
	21-38	12-27	5.0-20	4.4-6.5	0	0	
	38-54	12-27	5.0-20	4.4-6.5	0	0	
	54	---	---	---	0	0	
809:							
Walkermine very gravelly loam----------	0-1	---	---	---	0	0	
	1-3	12-26	25-35	6.1-7.0	0	0	
	3-12	12-26	10-25	5.6-6.8	0	0	
	12	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
809:							
Bottlehill very gravelly loam	0-0.5	---	---	---	0	0	
	0.5-2	---	---	---	0	0	
	2-4	10-20	25-40	5.1-6.5	0	0	
	4-9	10-20	25-40	5.1-6.5	0	0	
	9-13	15-27	10-25	4.5-6.5	0	0	
	13-22	15-27	10-25	4.5-6.5	0	0	
	22-33	18-35	5.0-15	4.5-6.5	0	0	
	33	---	---	---	0	0	
Logtrain gravelly loam	0-1	---	---	---	0	0	
	1-3	10-22	25-40	5.0-6.5	0	0	
	3-9	12-27	5.0-20	4.4-6.5	0	0	
	9-21	12-27	5.0-20	4.4-6.5	0	0	
	21-38	12-27	5.0-20	4.4-6.5	0	0	
	38-54	12-27	5.0-20	4.4-6.5	0	0	
	54	---	---	---	0	0	
Rock outcrop, metavolcanic.							
810:							
Dixmine very gravelly loam	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-6	18-27	20-30	5.6-6.5	0	0	
	6-11	20-30	15-25	5.1-6.5	0	0	
	11-17	20-30	15-25	5.1-6.5	0	0	
	17-30	27-35	15-20	4.5-6.0	0	0	
	30-41	27-35	15-20	4.5-6.0	0	0	
	41-54	27-35	15-20	4.5-6.0	0	0	
	54	---	---	---	0	0	
Mac gravelly loam	0-1	---	---	---	0	0	
	1-4	15-25	15-25	5.6-7.0	0	0	
	4-9	17-35	5.0-20	5.1-6.5	0	0	
	9-15	17-35	5.0-15	5.1-6.5	0	0	
	15-23	17-35	5.0-15	5.1-6.5	0	0	
	23-37	16-27	5.0-15	5.0-6.5	0	0	
	37	---	---	---	0	0	
Spine very gravelly loam	0-1	---	---	---	0	0	
	1-3	12-22	12-20	4.5-6.5	0	0	
	3-9	15-35	5.0-20	4.5-6.5	0	0	
	9-16	15-35	5.0-20	4.5-6.5	0	0	
	16	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
811:							
Powellton gravelly loam----------	0-0.5	---	---	---	0	0	
	0.5-2	---	---	---	0	0	
	2-4	18-27	20-30	5.6-6.5	0	0	
	4-9	22-35	8.0-25	4.5-6.5	0	0	
	9-15	22-35	8.0-25	4.5-6.5	0	0	
	15-24	22-35	8.0-25	4.5-6.5	0	0	
	24-30	22-35	8.0-25	4.5-6.5	0	0	
	30-41	17-30	4.0-10	4.5-6.0	0	0	
	41-61	17-30	4.0-10	4.5-6.0	0	0	
	61-83	17-30	4.0-10	4.5-6.0	0	0	
Toadtown loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-5	20-27	20-30	5.6-6.5	0	0	
	5-8	25-35	12-20	5.1-6.5	0	0	
	8-13	25-35	12-20	5.1-6.5	0	0	
	13-18	35-45	9.0-12	5.1-6.5	0	0	
	18-27	35-45	9.0-12	5.1-6.5	0	0	
	27-51	18-35	5.0-12	5.1-6.0	0	0	
	51-65	18-35	5.0-12	5.1-6.0	0	0	
	65-75	18-35	5.0-12	5.1-6.0	0	0	
	75-79	---	---	5.1-6.0	0	0	
812:							
Powellton gravelly loam----------	0-0.5	---	---	---	0	0	
	0.5-2	---	---	---	0	0	
	2-4	18-27	20-30	5.6-6.5	0	0	
	4-9	22-35	8.0-25	4.5-6.5	0	0	
	9-15	22-35	8.0-25	4.5-6.5	0	0	
	15-24	22-35	8.0-25	4.5-6.5	0	0	
	24-30	22-35	8.0-25	4.5-6.5	0	0	
	30-41	17-30	4.0-10	4.5-6.0	0	0	
	41-61	17-30	4.0-10	4.5-6.0	0	0	
	61-83	17-30	4.0-10	4.5-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
812:							
Toadtown loam	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-5	20-27	20-30	5.6-6.5	0	0	
	5-8	25-35	12-20	5.1-6.5	0	0	
	8-13	25-35	12-20	5.1-6.5	0	0	
	13-18	35-45	9.0-12	5.1-6.5	0	0	
	18-27	35-45	9.0-12	5.1-6.5	0	0	
	27-51	18-35	5.0-12	5.1-6.0	0	0	
	51-65	18-35	5.0-12	5.1-6.0	0	0	
	65-75	18-35	5.0-12	5.1-6.0	0	0	
	75-79	---	---	5.1-6.0	0	0	
813:							
Powellton gravelly loam	0-0.5	---	---	---	0	0	
	0.5-2	---	---	---	0	0	
	2-4	18-27	20-30	5.6-6.5	0	0	
	4-9	22-35	8.0-25	4.5-6.5	0	0	
	9-15	22-35	8.0-25	4.5-6.5	0	0	
	15-24	22-35	8.0-25	4.5-6.5	0	0	
	24-30	22-35	8.0-25	4.5-6.5	0	0	
	30-41	17-30	4.0-10	4.5-6.0	0	0	
	41-61	17-30	4.0-10	4.5-6.0	0	0	
	61-83	17-30	4.0-10	4.5-6.0	0	0	
Toadtown loam	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-5	20-27	20-30	5.6-6.5	0	0	
	5-8	25-35	12-20	5.1-6.5	0	0	
	8-13	25-35	12-20	5.1-6.5	0	0	
	13-18	35-45	9.0-12	5.1-6.5	0	0	
	18-27	35-45	9.0-12	5.1-6.5	0	0	
	27-51	18-35	5.0-12	5.1-6.0	0	0	
	51-65	18-35	5.0-12	5.1-6.0	0	0	
	65-75	18-35	5.0-12	5.1-6.0	0	0	
	75-79	---	---	5.1-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
814:							
Mountyana gravelly loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-4	15-25	20-30	5.6-7.3	0	0	
	4-9	18-35	12-25	5.6-6.5	0	0	
	9-13	18-35	12-25	5.6-6.5	0	0	
	13-19	18-35	12-25	5.6-6.5	0	0	
	19-26	18-35	10-15	5.1-6.5	0	0	
	26-37	18-35	10-15	5.1-6.5	0	0	
	37-52	18-30	10-15	4.5-5.5	0	0	
	52-65	16-25	10-15	4.5-5.5	0	0	
	65	---	---	---	0	0	
815:							
Mountyana gravelly loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-4	15-25	20-30	5.6-7.3	0	0	
	4-9	18-35	12-25	5.6-6.5	0	0	
	9-13	18-35	12-25	5.6-6.5	0	0	
	13-19	18-35	12-25	5.6-6.5	0	0	
	19-26	18-35	10-15	5.1-6.5	0	0	
	26-37	18-35	10-15	5.1-6.5	0	0	
	37-52	18-30	10-15	4.5-5.5	0	0	
	52-65	16-25	10-15	4.5-5.5	0	0	
	65	---	---	---	0	0	
817:							
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	0	0	
	0.5-1	---	---	---	0	0	
	1-3	10-18	30-40	5.6-6.7	0	0	
	3-6	10-18	20-35	5.1-6.7	0	0	
	6-13	10-18	20-35	5.1-6.7	0	0	
	13-21	12-20	15-25	5.1-6.5	0	0	
	21-35	12-20	15-25	5.1-6.5	0	0	
	35	---	---	---	0	0	
818:							
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	0	0	
	0.5-1	---	---	---	0	0	
	1-3	10-18	30-40	5.6-6.7	0	0	
	3-6	10-18	20-35	5.1-6.7	0	0	
	6-13	10-18	20-35	5.1-6.7	0	0	
	13-21	12-20	15-25	5.1-6.5	0	0	
	21-35	12-20	15-25	5.1-6.5	0	0	
	35	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
819:							
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	0	0	
	0.5-1	---	---	---	0	0	
	1-3	10-18	30-40	5.6-6.7	0	0	
	3-6	10-18	20-35	5.1-6.7	0	0	
	6-13	10-18	20-35	5.1-6.7	0	0	
	13-21	12-20	15-25	5.1-6.5	0	0	
	21-35	12-20	15-25	5.1-6.5	0	0	
	35	---	---	---	0	0	
Rock outcrop, mudflow breccia.							
820:							
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	0	0	
	0.5-1	---	---	---	0	0	
	1-3	10-18	30-40	5.6-6.7	0	0	
	3-6	10-18	20-35	5.1-6.7	0	0	
	6-13	10-18	20-35	5.1-6.7	0	0	
	13-21	12-20	15-25	5.1-6.5	0	0	
	21-35	12-20	15-25	5.1-6.5	0	0	
	35	---	---	---	0	0	
Rock outcrop, mudflow breccia.							
821:							
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	0	0	
	0.5-1	---	---	---	0	0	
	1-3	10-18	30-40	5.6-6.7	0	0	
	3-6	10-18	20-35	5.1-6.7	0	0	
	6-13	10-18	20-35	5.1-6.7	0	0	
	13-21	12-20	15-25	5.1-6.5	0	0	
	21-35	12-20	15-25	5.1-6.5	0	0	
	35	---	---	---	0	0	
Rock outcrop, mudflow breccia.							
822:							
Bonepile gravelly medial loam----------	0-1	---	---	---	0	0	
	1-3	10-20	30-40	5.1-6.5	0	0	
	3-9	10-20	30-40	5.1-6.5	0	0	
	9-18	10-20	20-30	4.5-5.5	0	0	
	18-30	12-20	20-30	4.5-5.5	0	0	
	30-44	15-25	10-20	3.5-5.5	0	0	
	44	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
823:							
Bonepile gravelly medial loam----------	0-1	---	---	---	0	0	
	1-3	10-20	30-40	5.1-6.5	0	0	
	3-9	10-20	30-40	5.1-6.5	0	0	
	9-18	10-20	20-30	4.5-5.5	0	0	
	18-30	12-20	20-30	4.5-5.5	0	0	
	30-44	15-25	10-20	3.5-5.5	0	0	
	44	---	---	---	0	0	
824:							
Beecee very gravelly medial loam----------	0-0.5	---	---	---	0	0	
	0.5-1	---	---	---	0	0	
	1-4	8-20	30-40	5.6-7.0	0	0	
	4-8	10-20	20-30	5.1-6.5	0	0	
	8-15	10-20	20-30	5.1-6.5	0	0	
	15-22	10-20	20-30	5.1-6.5	0	0	
	22-31	12-22	15-25	5.1-6.5	0	0	
	31-44	12-22	15-25	5.1-6.5	0	0	
	44-59	18-27	15-25	5.1-6.5	0	0	
	59-68	18-27	15-25	5.1-6.5	0	0	
	68-86	18-27	15-25	5.1-6.5	0	0	
825:							
Beecee very gravelly medial loam----------	0-0.5	---	---	---	0	0	
	0.5-1	---	---	---	0	0	
	1-4	8-20	30-40	5.6-7.0	0	0	
	4-8	10-20	20-30	5.1-6.5	0	0	
	8-15	10-20	20-30	5.1-6.5	0	0	
	15-22	10-20	20-30	5.1-6.5	0	0	
	22-31	12-22	15-25	5.1-6.5	0	0	
	31-44	12-22	15-25	5.1-6.5	0	0	
	44-59	18-27	15-25	5.1-6.5	0	0	
	59-68	18-27	15-25	5.1-6.5	0	0	
	68-86	18-27	15-25	5.1-6.5	0	0	
Lydon very gravelly medial coarse sandy loam	0-0.5	---	---	---	0	0	
	0.5-1	---	---	---	0	0	
	1-3	10-18	30-40	5.6-6.7	0	0	
	3-6	10-18	20-35	5.1-6.7	0	0	
	6-13	10-18	20-35	5.1-6.7	0	0	
	13-21	12-20	15-25	5.1-6.5	0	0	
	21-35	12-20	15-25	5.1-6.5	0	0	
	35	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
826:							
Redbone gravelly medial sandy loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-4	10-16	30-40	5.1-6.5	0	0	
	4-7	12-18	20-30	5.1-6.5	0	0	
	7-17	12-18	20-30	5.1-6.5	0	0	
	17-28	15-22	20-30	5.1-6.5	0	0	
	28-41	15-22	20-30	5.1-6.5	0	0	
	41-54	15-22	20-30	5.0-6.5	0	0	
	54	---	---	---	0	0	
827:							
Redbone gravelly medial sandy loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-4	10-16	30-40	5.1-6.5	0	0	
	4-7	12-18	20-30	5.1-6.5	0	0	
	7-17	12-18	20-30	5.1-6.5	0	0	
	17-28	15-22	20-30	5.1-6.5	0	0	
	28-41	15-22	20-30	5.1-6.5	0	0	
	41-54	15-22	20-30	5.0-6.5	0	0	
	54	---	---	---	0	0	
829:							
Paradiso loam-------------------------------	0-2	---	---	---	0	0	
	2-4	17-27	20-30	5.6-7.3	0	0	
	4-9	24-35	15-30	5.6-7.3	0	0	
	9-16	25-40	10-20	5.6-6.8	0	0	
	16-25	35-55	7.0-20	5.1-6.8	0	0	
	25-45	35-55	7.0-20	5.1-6.8	0	0	
	45-58	17-35	5.0-15	4.5-6.8	0	0	
	58-74	17-35	5.0-15	4.5-6.8	0	0	
	74-84	17-27	5.0-15	4.5-6.5	0	0	
830:							
Paradiso loam-------------------------------	0-2	---	---	---	0	0	
	2-4	17-27	20-30	5.6-7.3	0	0	
	4-9	24-35	15-30	5.6-7.3	0	0	
	9-16	25-40	10-20	5.6-6.8	0	0	
	16-25	35-55	7.0-20	5.1-6.8	0	0	
	25-45	35-55	7.0-20	5.1-6.8	0	0	
	45-58	17-35	5.0-15	4.5-6.8	0	0	
	58-74	17-35	5.0-15	4.5-6.8	0	0	
	74-84	17-27	5.0-15	4.5-6.5	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
831:							
Surnuf gravelly loam----------	0-1	---	---	---	0	0	
	1-4	22-30	20-32	6.1-7.3	0	0	
	4-9	27-40	15-30	6.1-7.3	0	0	
	9-16	27-40	15-30	6.1-7.3	0	0	
	16-27	35-55	15-30	6.1-7.3	0	0	
	27-29	35-55	15-30	6.1-7.3	0	0	
	29-56	35-55	15-30	5.6-7.0	0	0	
	56-72	35-55	15-30	5.6-7.0	0	0	
Bigridge loam----------	0-1	---	---	---	0	0	
	1-5	15-25	8.1-14	5.6-7.3	0	0	
	5-9	19-30	8.6-16	5.6-7.3	0	0	
	9-15	18-35	8.3-19	4.5-7.3	0	0	
	15-20	18-35	8.0-19	4.5-6.5	0	0	
	20-27	15-35	7.8-19	4.5-6.5	0	0	
	27-36	15-35	5.8-19	4.5-6.5	0	0	
	36-51	15-35	7.7-19	4.5-6.5	0	0	
	51-62	---	---	---	0	0	
Spine very gravelly loam----------	0-1	---	---	---	0	0	
	1-3	12-22	12-20	4.5-6.5	0	0	
	3-9	15-35	5.0-20	4.5-6.5	0	0	
	9-16	15-35	5.0-20	4.5-6.5	0	0	
	16	---	---	---	0	0	
832:							
Surnuf gravelly loam----------	0-1	---	---	---	0	0	
	1-4	22-30	20-32	6.1-7.3	0	0	
	4-9	27-40	15-30	6.1-7.3	0	0	
	9-16	27-40	15-30	6.1-7.3	0	0	
	16-27	35-55	15-30	6.1-7.3	0	0	
	27-29	35-55	15-30	6.1-7.3	0	0	
	29-56	35-55	15-30	5.6-7.0	0	0	
	56-72	35-55	15-30	5.6-7.0	0	0	
Bigridge loam----------	0-1	---	---	---	0	0	
	1-5	15-25	8.1-14	5.6-7.3	0	0	
	5-9	19-30	8.6-16	5.6-7.3	0	0	
	9-15	18-35	8.3-19	4.5-7.3	0	0	
	15-20	18-35	8.0-19	4.5-6.5	0	0	
	20-27	15-35	7.8-19	4.5-6.5	0	0	
	27-36	15-35	5.8-19	4.5-6.5	0	0	
	36-51	15-35	7.7-19	4.5-6.5	0	0	
	51-62	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
832:							
Spine very gravelly loam----------	0-1	---	---	---	0	0	
	1-3	12-22	12-20	4.5-6.5	0	0	
	3-9	15-35	5.0-20	4.5-6.5	0	0	
	9-16	15-35	5.0-20	4.5-6.5	0	0	
	16	---	---	---	0	0	
833:							
Surnuf gravelly loam----------	0-1	---	---	---	0	0	
	1-4	22-30	20-32	6.1-7.3	0	0	
	4-9	27-40	15-30	6.1-7.3	0	0	
	9-16	27-40	15-30	6.1-7.3	0	0	
	16-27	35-55	15-30	6.1-7.3	0	0	
	27-29	35-55	15-30	6.1-7.3	0	0	
	29-56	35-55	15-30	5.6-7.0	0	0	
	56-72	35-55	15-30	5.6-7.0	0	0	
Bigridge loam----------	0-1	---	---	---	0	0	
	1-5	15-25	8.1-14	5.6-7.3	0	0	
	5-9	19-30	8.6-16	5.6-7.3	0	0	
	9-15	18-35	8.3-19	4.5-7.3	0	0	
	15-20	18-35	8.0-19	4.5-6.5	0	0	
	20-27	15-35	7.8-19	4.5-6.5	0	0	
	27-36	15-35	5.8-19	4.5-6.5	0	0	
	36-51	15-35	7.7-19	4.5-6.5	0	0	
	51-62	---	---	---	0	0	
Spine very gravelly loam----------	0-1	---	---	---	0	0	
	1-3	12-22	12-20	4.5-6.5	0	0	
	3-9	15-35	5.0-20	4.5-6.5	0	0	
	9-16	15-35	5.0-20	4.5-6.5	0	0	
	16	---	---	---	0	0	
834:							
Hietanen gravelly loam----------	0-1	---	---	---	0	0	
	1-3	18-27	15-25	5.6-7.0	0	0	
	3-8	22-35	5.0-20	5.1-6.5	0	0	
	8-19	22-35	5.0-15	5.1-6.5	0	0	
	19-30	22-35	5.0-15	5.1-6.5	0	0	
	30-53	22-35	5.0-15	5.1-6.5	0	0	
	53	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
834:							
Mac gravelly loam----------	0-1	---	---	---	0	0	
	1-4	15-25	15-25	5.6-7.0	0	0	
	4-9	17-35	5.0-20	5.1-6.5	0	0	
	9-15	17-35	5.0-15	5.1-6.5	0	0	
	15-23	17-35	5.0-15	5.1-6.5	0	0	
	23-37	16-27	5.0-15	5.0-6.5	0	0	
	37	---	---	---	0	0	
835:							
Hietanen gravelly loam----------	0-1	---	---	---	0	0	
	1-3	18-27	15-25	5.6-7.0	0	0	
	3-8	22-35	5.0-20	5.1-6.5	0	0	
	8-19	22-35	5.0-15	5.1-6.5	0	0	
	19-30	22-35	5.0-15	5.1-6.5	0	0	
	30-53	22-35	5.0-15	5.1-6.5	0	0	
	53	---	---	---	0	0	
Mac gravelly loam----------	0-1	---	---	---	0	0	
	1-4	15-25	15-25	5.6-7.0	0	0	
	4-9	17-35	5.0-20	5.1-6.5	0	0	
	9-15	17-35	5.0-15	5.1-6.5	0	0	
	15-23	17-35	5.0-15	5.1-6.5	0	0	
	23-37	16-27	5.0-15	5.0-6.5	0	0	
	37	---	---	---	0	0	
836:							
Hietanen gravelly loam----------	0-1	---	---	---	0	0	
	1-3	18-27	15-25	5.6-7.0	0	0	
	3-8	22-35	5.0-20	5.1-6.5	0	0	
	8-19	22-35	5.0-15	5.1-6.5	0	0	
	19-30	22-35	5.0-15	5.1-6.5	0	0	
	30-53	22-35	5.0-15	5.1-6.5	0	0	
	53	---	---	---	0	0	
Mac gravelly loam----------	0-1	---	---	---	0	0	
	1-4	15-25	15-25	5.6-7.0	0	0	
	4-9	17-35	5.0-20	5.1-6.5	0	0	
	9-15	17-35	5.0-15	5.1-6.5	0	0	
	15-23	17-35	5.0-15	5.1-6.5	0	0	
	23-37	16-27	5.0-15	5.0-6.5	0	0	
	37	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
836:							
Spine very gravelly loam----------	0-1	---	---	---	0	0	
	1-3	12-22	12-20	4.5-6.5	0	0	
	3-9	15-35	5.0-20	4.5-6.5	0	0	
	9-16	15-35	5.0-20	4.5-6.5	0	0	
	16	---	---	---	0	0	
837:							
Hietanen gravelly loam----------	0-1	---	---	---	0	0	
	1-3	18-27	15-25	5.6-7.0	0	0	
	3-8	22-35	5.0-20	5.1-6.5	0	0	
	8-19	22-35	5.0-15	5.1-6.5	0	0	
	19-30	22-35	5.0-15	5.1-6.5	0	0	
	30-53	22-35	5.0-15	5.1-6.5	0	0	
	53	---	---	---	0	0	
Spine very gravelly loam----------	0-1	---	---	---	0	0	
	1-3	12-22	12-20	4.5-6.5	0	0	
	3-9	15-35	5.0-20	4.5-6.5	0	0	
	9-16	15-35	5.0-20	4.5-6.5	0	0	
	16	---	---	---	0	0	
Mac gravelly loam----------	0-1	---	---	---	0	0	
	1-4	15-25	15-25	5.6-7.0	0	0	
	4-9	17-35	5.0-20	5.1-6.5	0	0	
	9-15	17-35	5.0-15	5.1-6.5	0	0	
	15-23	17-35	5.0-15	5.1-6.5	0	0	
	23-37	16-27	5.0-15	5.0-6.5	0	0	
	37	---	---	---	0	0	
838:							
Dixmine very gravelly loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-6	18-27	20-30	5.6-6.5	0	0	
	6-11	20-30	15-25	5.1-6.5	0	0	
	11-17	20-30	15-25	5.1-6.5	0	0	
	17-30	27-35	15-20	4.5-6.0	0	0	
	30-41	27-35	15-20	4.5-6.0	0	0	
	41-54	27-35	15-20	4.5-6.0	0	0	
	54	---	---	---	0	0	
Spine very gravelly loam----------	0-1	---	---	---	0	0	
	1-3	12-22	12-20	4.5-6.5	0	0	
	3-9	15-35	5.0-20	4.5-6.5	0	0	
	9-16	15-35	5.0-20	4.5-6.5	0	0	
	16	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
838:							
Mac gravelly loam----------	0-1	---	---	---	0	0	
	1-4	15-25	15-25	5.6-7.0	0	0	
	4-9	17-35	5.0-20	5.1-6.5	0	0	
	9-15	17-35	5.0-15	5.1-6.5	0	0	
	15-23	17-35	5.0-15	5.1-6.5	0	0	
	23-37	16-27	5.0-15	5.0-6.5	0	0	
	37	---	---	---	0	0	
839:							
Chawanakee gravelly sandy loam----------	0-1	---	---	---	0	0	
	1-2	---	---	---	0	0	
	2-5	2-6	8.0-15	5.6-6.5	0	0	
	5-11	2-6	2.0-10	5.1-6.5	0	0	
	11-19	2-6	2.0-10	5.1-6.5	0	0	
	19	---	---	---	0	0	
Billscabin gravelly sandy loam----------	0-2	---	---	---	0	0	
	2-5	5-15	7.9-18	5.6-6.5	0	0	
	5-14	5-15	5.8-14	5.6-6.5	0	0	
	14-27	5-15	3.7-12	5.1-6.5	0	0	
	27-37	3-12	1.9-9.6	4.5-6.0	0	0	
	37-57	3-12	1.9-9.6	4.5-6.0	0	0	
	57-82	3-12	1.9-9.6	4.5-6.0	0	0	
841:							
Billscabin gravelly sandy loam----------	0-2	---	---	---	0	0	
	2-5	5-15	7.9-18	5.6-6.5	0	0	
	5-14	5-15	5.8-14	5.6-6.5	0	0	
	14-27	5-15	3.7-12	5.1-6.5	0	0	
	27-37	3-12	1.9-9.6	4.5-6.0	0	0	
	37-57	3-12	1.9-9.6	4.5-6.0	0	0	
	57-82	3-12	1.9-9.6	4.5-6.0	0	0	
Bonneyridge sandy loam----------	0-1	---	---	---	0	0	
	1-3	5-15	7.9-28	5.6-7.3	0	0	
	3-6	5-15	7.9-28	5.6-7.3	0	0	
	6-16	5-18	4.5-24	5.1-6.5	0	0	
	16-22	5-18	4.5-24	5.1-6.5	0	0	
	22-31	5-18	4.5-24	5.1-6.5	0	0	
	31-39	5-18	4.5-24	5.1-6.5	0	0	
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
842:							
Billscabin gravelly sandy loam----------	0-2	---	---	---	0	0	
	2-5	5-15	7.9-18	5.6-6.5	0	0	
	5-14	5-15	5.8-14	5.6-6.5	0	0	
	14-27	5-15	3.7-12	5.1-6.5	0	0	
	27-37	3-12	1.9-9.6	4.5-6.0	0	0	
	37-57	3-12	1.9-9.6	4.5-6.0	0	0	
	57-82	3-12	1.9-9.6	4.5-6.0	0	0	
Bonneyridge sandy loam----------	0-1	---	---	---	0	0	
	1-3	5-15	7.9-28	5.6-7.3	0	0	
	3-6	5-15	7.9-28	5.6-7.3	0	0	
	6-16	5-18	4.5-24	5.1-6.5	0	0	
	16-22	5-18	4.5-24	5.1-6.5	0	0	
	22-31	5-18	4.5-24	5.1-6.5	0	0	
	31-39	5-18	4.5-24	5.1-6.5	0	0	
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	
846:							
Bonneyridge sandy loam----------	0-1	---	---	---	0	0	
	1-3	5-15	7.9-28	5.6-7.3	0	0	
	3-6	5-15	7.9-28	5.6-7.3	0	0	
	6-16	5-18	4.5-24	5.1-6.5	0	0	
	16-22	5-18	4.5-24	5.1-6.5	0	0	
	22-31	5-18	4.5-24	5.1-6.5	0	0	
	31-39	5-18	4.5-24	5.1-6.5	0	0	
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	
Lewisflat loam----------	0-3	---	---	---	0	0	
	3-5	5-18	---	5.1-6.5	0	0	
	5-9	5-18	1.9-11	5.1-6.5	0	0	
	9-18	18-27	---	5.1-6.0	0	0	
	18-33	18-27	---	5.1-6.0	0	0	
	33-49	18-27	---	5.1-6.0	0	0	
	49-65	8-27	---	4.5-6.0	0	0	
	65-75	8-27	---	4.5-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
847:							
Bonneyridge sandy loam----------	0-1	---	---	---	0	0	
	1-3	5-15	7.9-28	5.6-7.3	0	0	
	3-6	5-15	7.9-28	5.6-7.3	0	0	
	6-16	5-18	4.5-24	5.1-6.5	0	0	
	16-22	5-18	4.5-24	5.1-6.5	0	0	
	22-31	5-18	4.5-24	5.1-6.5	0	0	
	31-39	5-18	4.5-24	5.1-6.5	0	0	
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	
Lewisflat loam----------	0-3	---	---	---	0	0	
	3-5	5-18	---	5.1-6.5	0	0	
	5-9	5-18	1.9-11	5.1-6.5	0	0	
	9-18	18-27	---	5.1-6.0	0	0	
	18-33	18-27	---	5.1-6.0	0	0	
	33-49	18-27	---	5.1-6.0	0	0	
	49-65	8-27	---	4.5-6.0	0	0	
	65-75	8-27	---	4.5-6.0	0	0	
848:							
Bonneyridge sandy loam----------	0-1	---	---	---	0	0	
	1-3	5-15	7.9-28	5.6-7.3	0	0	
	3-6	5-15	7.9-28	5.6-7.3	0	0	
	6-16	5-18	4.5-24	5.1-6.5	0	0	
	16-22	5-18	4.5-24	5.1-6.5	0	0	
	22-31	5-18	4.5-24	5.1-6.5	0	0	
	31-39	5-18	4.5-24	5.1-6.5	0	0	
	39-56	5-10	2.9-7.6	5.1-6.0	0	0	
	56-76	5-10	2.9-7.6	5.1-6.0	0	0	
Lewisflat loam----------	0-3	---	---	---	0	0	
	3-5	5-18	---	5.1-6.5	0	0	
	5-9	5-18	1.9-11	5.1-6.5	0	0	
	9-18	18-27	---	5.1-6.0	0	0	
	18-33	18-27	---	5.1-6.0	0	0	
	33-49	18-27	---	5.1-6.0	0	0	
	49-65	8-27	---	4.5-6.0	0	0	
	65-75	8-27	---	4.5-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
850:							
Lewisflat loam	0-3	---	---	---	0	0	
	3-5	5-18	---	5.1-6.5	0	0	
	5-9	5-18	1.9-11	5.1-6.5	0	0	
	9-18	18-27	---	5.1-6.0	0	0	
	18-33	18-27	---	5.1-6.0	0	0	
	33-49	18-27	---	5.1-6.0	0	0	
	49-65	8-27	---	4.5-6.0	0	0	
	65-75	8-27	---	4.5-6.0	0	0	
851:							
Lewisflat loam	0-3	---	---	---	0	0	
	3-5	5-18	---	5.1-6.5	0	0	
	5-9	5-18	1.9-11	5.1-6.5	0	0	
	9-18	18-27	---	5.1-6.0	0	0	
	18-33	18-27	---	5.1-6.0	0	0	
	33-49	18-27	---	5.1-6.0	0	0	
	49-65	8-27	---	4.5-6.0	0	0	
	65-75	8-27	---	4.5-6.0	0	0	
852:							
Lewisflat loam	0-3	---	---	---	0	0	
	3-5	5-18	---	5.1-6.5	0	0	
	5-9	5-18	1.9-11	5.1-6.5	0	0	
	9-18	18-27	---	5.1-6.0	0	0	
	18-33	18-27	---	5.1-6.0	0	0	
	33-49	18-27	---	5.1-6.0	0	0	
	49-65	8-27	---	4.5-6.0	0	0	
	65-75	8-27	---	4.5-6.0	0	0	
860:							
Toadtown gravelly loam	0-1	---	---	---	0	0	
	1-6	15-25	32-41	5.8-6.5	0	0	
	6-15	22-37	9.7-16	5.8-6.5	0	0	
	15-32	40-60	12-19	5.1-6.5	0	0	
	32-43	40-60	12-19	5.1-6.5	0	0	
	43-55	18-37	5.2-10	5.1-6.5	0	0	
	55-80	18-37	5.2-10	5.1-6.5	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
860:							
Powellton silt loam----------	0-1	---	---	---	0	0	
	1-3	18-24	9.3-13	5.1-6.5	0	0	
	3-9	18-24	8.6-13	5.1-6.5	0	0	
	9-19	22-35	---	5.1-6.5	0	0	
	19-28	22-35	---	5.1-6.5	0	0	
	28-33	22-35	---	5.1-6.5	0	0	
	33-48	18-35	---	5.1-6.0	0	0	
	48-66	18-35	5.2-12	5.1-6.0	0	0	
	66-73	16-35	---	5.3-6.0	0	0	
	73-83	11-27	---	5.1-5.5	0	0	
	83-109	11-27	---	5.1-5.5	0	0	
861:							
Toadtown gravelly loam----------	0-1	---	---	---	0	0	
	1-6	15-25	32-41	5.8-6.5	0	0	
	6-15	22-37	9.7-16	5.8-6.5	0	0	
	15-32	40-60	12-19	5.1-6.5	0	0	
	32-43	40-60	12-19	5.1-6.5	0	0	
	43-55	18-37	5.2-10	5.1-6.5	0	0	
	55-80	18-37	5.2-10	5.1-6.5	0	0	
Powellton silt loam----------	0-1	---	---	---	0	0	
	1-3	18-24	9.3-13	5.1-6.5	0	0	
	3-9	18-24	8.6-13	5.1-6.5	0	0	
	9-19	22-35	---	5.1-6.5	0	0	
	19-28	22-35	---	5.1-6.5	0	0	
	28-33	22-35	---	5.1-6.5	0	0	
	33-48	18-35	---	5.1-6.0	0	0	
	48-66	18-35	5.2-12	5.1-6.0	0	0	
	66-73	16-35	---	5.3-6.0	0	0	
	73-83	11-27	---	5.1-5.5	0	0	
	83-109	11-27	---	5.1-5.5	0	0	
862:							
Toadtown gravelly loam----------	0-1	---	---	---	0	0	
	1-6	15-25	32-41	5.8-6.5	0	0	
	6-15	22-37	9.7-16	5.8-6.5	0	0	
	15-32	40-60	12-19	5.1-6.5	0	0	
	32-43	40-60	12-19	5.1-6.5	0	0	
	43-55	18-37	5.2-10	5.1-6.5	0	0	
	55-80	18-37	5.2-10	5.1-6.5	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
862:							
Powellton silt loam	0-1	---	---	---	0	0	
	1-3	18-24	9.3-13	5.1-6.5	0	0	
	3-9	18-24	8.6-13	5.1-6.5	0	0	
	9-19	22-35	---	5.1-6.5	0	0	
	19-28	22-35	---	5.1-6.5	0	0	
	28-33	22-35	---	5.1-6.5	0	0	
	33-48	18-35	---	5.1-6.0	0	0	
	48-66	18-35	5.2-12	5.1-6.0	0	0	
	66-73	16-35	---	5.3-6.0	0	0	
	73-83	11-27	---	5.1-5.5	0	0	
	83-109	11-27	---	5.1-5.5	0	0	
863:							
Toadtown gravelly loam	0-1	---	---	---	0	0	
	1-6	15-25	32-41	5.8-6.5	0	0	
	6-15	22-37	9.7-16	5.8-6.5	0	0	
	15-32	40-60	12-19	5.1-6.5	0	0	
	32-43	40-60	12-19	5.1-6.5	0	0	
	43-55	18-37	5.2-10	5.1-6.5	0	0	
	55-80	18-37	5.2-10	5.1-6.5	0	0	
Powellton silt loam	0-1	---	---	---	0	0	
	1-3	18-24	9.3-13	5.1-6.5	0	0	
	3-9	18-24	8.6-13	5.1-6.5	0	0	
	9-19	22-35	---	5.1-6.5	0	0	
	19-28	22-35	---	5.1-6.5	0	0	
	28-33	22-35	---	5.1-6.5	0	0	
	33-48	18-35	---	5.1-6.0	0	0	
	48-66	18-35	5.2-12	5.1-6.0	0	0	
	66-73	16-35	---	5.3-6.0	0	0	
	73-83	11-27	---	5.1-5.5	0	0	
	83-109	11-27	---	5.1-5.5	0	0	
880:							
Sites taxadjunct gravelly loam	0-1	---	---	---	0	0	
	1-3	16-25	20-30	5.8-6.5	0	0	
	3-10	19-30	12-20	5.4-6.5	0	0	
	10-21	38-50	9.0-12	5.0-6.5	0	0	
	21-34	38-50	9.0-12	5.0-6.5	0	0	
	34-59	45-55	9.0-12	5.0-6.5	0	0	
	59-72	45-55	9.0-12	5.0-6.5	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
880:							
Jocal taxadjunct gravelly loam----------	0-3	---	---	---	0	0	
	3-4	9-17	12-20	5.5-6.3	0	0	
	4-9	10-22	12-20	5.0-6.4	0	0	
	9-19	15-30	9.0-12	5.8-6.3	0	0	
	19-33	15-30	9.0-12	5.8-6.3	0	0	
	33-46	15-30	2.0-10	4.8-6.3	0	0	
	46-52	15-30	2.0-10	4.8-5.6	0	0	
	52-68	---	---	---	0	0	
881:							
Sites taxadjunct gravelly loam----------	0-1	---	---	---	0	0	
	1-3	16-25	20-30	5.8-6.5	0	0	
	3-10	19-30	12-20	5.4-6.5	0	0	
	10-21	38-50	9.0-12	5.0-6.5	0	0	
	21-34	38-50	9.0-12	5.0-6.5	0	0	
	34-59	45-55	9.0-12	5.0-6.5	0	0	
	59-72	45-55	9.0-12	5.0-6.5	0	0	
Jocal taxadjunct gravelly loam----------	0-3	---	---	---	0	0	
	3-4	9-17	12-20	5.5-6.3	0	0	
	4-9	10-22	12-20	5.0-6.4	0	0	
	9-19	15-30	9.0-12	5.8-6.3	0	0	
	19-33	15-30	9.0-12	5.8-6.3	0	0	
	33-46	15-30	2.0-10	4.8-6.3	0	0	
	46-52	15-30	2.0-10	4.8-5.6	0	0	
	52-68	---	---	---	0	0	
882:							
Sites taxadjunct gravelly loam----------	0-1	---	---	---	0	0	
	1-3	16-25	20-30	5.8-6.5	0	0	
	3-10	19-30	12-20	5.4-6.5	0	0	
	10-21	38-50	9.0-12	5.0-6.5	0	0	
	21-34	38-50	9.0-12	5.0-6.5	0	0	
	34-59	45-55	9.0-12	5.0-6.5	0	0	
	59-72	45-55	9.0-12	5.0-6.5	0	0	
Jocal taxadjunct gravelly loam----------	0-3	---	---	---	0	0	
	3-4	9-17	12-20	5.5-6.3	0	0	
	4-9	10-22	12-20	5.0-6.4	0	0	
	9-19	15-30	9.0-12	5.8-6.3	0	0	
	19-33	15-30	9.0-12	5.8-6.3	0	0	
	33-46	15-30	2.0-10	4.8-6.3	0	0	
	46-52	15-30	2.0-10	4.8-5.6	0	0	
	52-68	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
883:							
Sites taxadjunct gravelly loam----------	0-1	---	---	---	0	0	
	1-3	16-25	20-30	5.8-6.5	0	0	
	3-10	19-30	12-20	5.4-6.5	0	0	
	10-21	38-50	9.0-12	5.0-6.5	0	0	
	21-34	38-50	9.0-12	5.0-6.5	0	0	
	34-59	45-55	9.0-12	5.0-6.5	0	0	
	59-72	45-55	9.0-12	5.0-6.5	0	0	
Jocal taxadjunct gravelly loam----------	0-3	---	---	---	0	0	
	3-4	9-17	12-20	5.5-6.3	0	0	
	4-9	10-22	12-20	5.0-6.4	0	0	
	9-19	15-30	9.0-12	5.8-6.3	0	0	
	19-33	15-30	9.0-12	5.8-6.3	0	0	
	33-46	15-30	2.0-10	4.8-6.3	0	0	
	46-52	15-30	2.0-10	4.8-5.6	0	0	
	52-68	---	---	---	0	0	
885:							
Rogerville silt loam------------------------	0-2	---	---	---	0	0	
	2-7	11-27	10-20	4.5-6.5	0	0	
	7-13	30-38	10-20	5.6-6.5	0	0	
	13-24	35-65	1.0-10	4.5-6.5	0	0	
	24-34	35-65	1.0-10	4.5-6.5	0	0	
	34-42	35-65	1.0-10	4.5-6.5	0	0	
	42-51	28-55	1.0-10	4.5-7.3	0	0	
	51-55	---	---	---	0	0	
886:							
Rogerville silt loam------------------------	0-2	---	---	---	0	0	
	2-7	11-27	10-20	4.5-6.5	0	0	
	7-13	30-38	10-20	5.6-6.5	0	0	
	13-24	35-65	1.0-10	4.5-6.5	0	0	
	24-34	35-65	1.0-10	4.5-6.5	0	0	
	34-42	35-65	1.0-10	4.5-6.5	0	0	
	42-51	28-55	1.0-10	4.5-7.3	0	0	
	51-55	---	---	---	0	0	
892:							
Rogerville silt loam------------------------	0-2	---	---	---	0	0	
	2-7	11-27	10-20	4.5-6.5	0	0	
	7-13	30-38	10-20	5.6-6.5	0	0	
	13-24	35-65	1.0-10	4.5-6.5	0	0	
	24-34	35-65	1.0-10	4.5-6.5	0	0	
	34-42	35-65	1.0-10	4.5-6.5	0	0	
	42-51	28-55	1.0-10	4.5-7.3	0	0	
	51-55	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
893:							
Rogerville silt loam----------	0-2	---	---	---	0	0	
	2-7	11-27	10-20	4.5-6.5	0	0	
	7-13	30-38	10-20	5.6-6.5	0	0	
	13-24	35-65	1.0-10	4.5-6.5	0	0	
	24-34	35-65	1.0-10	4.5-6.5	0	0	
	34-42	35-65	1.0-10	4.5-6.5	0	0	
	42-51	28-55	1.0-10	4.5-7.3	0	0	
	51-55	---	---	---	0	0	
902:							
Lava flows, Lovejoy basalt.							
Lumpkin gravelly medial sandy loam----------	0-3	8-12	---	5.1-6.5	0	0	
	3-8	9-18	35-45	5.1-6.5	0	0	
	8-14	9-18	35-45	5.1-6.5	0	0	
	14	---	---	---	0	0	
903:							
Mudwash gravelly medial sandy loam----------	0-1	---	---	---	0	0	
	1-4	---	---	---	0	0	
	4-8	8-18	35-45	5.1-6.5	0	0	
	8-13	8-18	35-45	5.1-6.5	0	0	
	13-26	12-22	35-45	4.5-6.5	0	0	
	26-35	18-38	35-55	4.0-6.5	0	0	
	35-52	18-38	35-55	4.0-6.5	0	0	
	52-72	15-28	35-55	4.0-6.0	0	0	
	72-89	---	---	---	0	0	
Timberisland very gravelly medial sandy loam	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-6	5-18	35-90	5.1-6.5	0	0	
	6-14	5-18	35-55	5.1-6.5	0	0	
	14-25	8-18	35-55	5.1-6.5	0	0	
	25-35	10-22	35-55	4.5-6.5	0	0	
	35-48	10-22	35-55	4.5-6.5	0	0	
	48	---	---	---	0	0	
Lavatop gravelly medial fine sandy loam-----	0-0.5	---	---	---	0	0	
	0.5-4	18-20	35-45	5.1-6.0	0	0	
	4-15	18-20	35-45	5.1-5.5	0	0	
	15-26	18-20	35-45	5.1-5.5	0	0	
	26	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
904:							
Lava flows, Lovejoy basalt.							
Lavatop gravelly medial fine sandy loam-----	0-0.5	---	---	---	0	0	
	0.5-4	18-20	35-45	5.1-6.0	0	0	
	4-15	18-20	35-45	5.1-5.5	0	0	
	15-26	18-20	35-45	5.1-5.5	0	0	
	26	---	---	---	0	0	
905:							
Lava flows, Lovejoy basalt.							
Lumpkin gravelly medial sandy loam----------	0-3	8-12	---	5.1-6.5	0	0	
	3-8	9-18	35-45	5.1-6.5	0	0	
	8-14	9-18	35-45	5.1-6.5	0	0	
	14	---	---	---	0	0	
906:							
Lava flows, Lovejoy basalt.							
Lumpkin gravelly medial sandy loam----------	0-3	8-12	---	5.1-6.5	0	0	
	3-8	9-18	35-45	5.1-6.5	0	0	
	8-14	9-18	35-45	5.1-6.5	0	0	
	14	---	---	---	0	0	
911:							
Endoaquolls loam----------	0-3	16-30	25-35	6.1-7.3	0	0	
	3-8	16-30	25-35	6.1-7.3	0	0	
	8-17	16-30	25-35	6.1-7.3	0	0	
	17-28	35-50	22-32	6.6-7.3	0	0	
	28-43	35-50	25-32	6.6-7.3	0	0	
	43-58	20-50	15-35	6.1-7.8	0	0	
	58-73	20-50	15-25	6.1-7.8	0	0	
923:							
Powderhouse medial sandy loam----------	0-2	---	---	---	0	0	
	2-4	8-12	30-85	5.0-6.5	0	0	
	4-11	8-12	30-45	5.5-6.5	0	0	
	11-27	10-18	30-45	5.0-6.5	0	0	
	27-36	10-12	30-45	4.5-5.5	0	0	
	36-82	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
923:							
McNair medial coarse sandy loam----------	0-3	---	---	---	0	0	
	3-6	5-12	30-85	5.1-7.3	0	0	
	6-16	5-12	30-45	5.1-7.3	0	0	
	16-25	10-18	30-45	4.5-6.5	0	0	
	25-33	10-25	30-45	4.5-6.5	0	0	
	33-48	10-25	30-45	4.5-6.5	0	0	
	48-57	8-25	30-45	4.5-5.5	0	0	
	57-88	---	---	---	0	0	
Greenwell medial sandy loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-5	8-11	30-85	4.5-6.5	0	0	
	5-10	8-11	30-85	4.5-6.5	0	0	
	10-18	10-15	30-45	4.5-6.5	0	0	
	18-23	12-18	30-45	4.5-5.5	0	0	
	23-32	12-18	30-45	4.5-5.5	0	0	
	32	---	---	---	0	0	
924:							
Powderhouse medial sandy loam----------	0-2	---	---	---	0	0	
	2-4	8-12	30-85	5.0-6.5	0	0	
	4-11	8-12	30-45	5.5-6.5	0	0	
	11-27	10-18	30-45	5.0-6.5	0	0	
	27-36	10-12	30-45	4.5-5.5	0	0	
	36-82	---	---	---	0	0	
McNair medial coarse sandy loam----------	0-3	---	---	---	0	0	
	3-6	5-12	30-85	5.1-7.3	0	0	
	6-16	5-12	30-45	5.1-7.3	0	0	
	16-25	10-18	30-45	4.5-6.5	0	0	
	25-33	10-25	30-45	4.5-6.5	0	0	
	33-48	10-25	30-45	4.5-6.5	0	0	
	48-57	8-25	30-45	4.5-5.5	0	0	
	57-88	---	---	---	0	0	
Greenwell medial sandy loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-5	8-11	30-85	4.5-6.5	0	0	
	5-10	8-11	30-85	4.5-6.5	0	0	
	10-18	10-15	30-45	4.5-6.5	0	0	
	18-23	12-18	30-45	4.5-5.5	0	0	
	23-32	12-18	30-45	4.5-5.5	0	0	
	32	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
925:							
Powderhouse medial sandy loam----------	0-2	---	---	---	0	0	
	2-4	8-12	30-85	5.0-6.5	0	0	
	4-11	8-12	30-45	5.5-6.5	0	0	
	11-27	10-18	30-45	5.0-6.5	0	0	
	27-36	10-12	30-45	4.5-5.5	0	0	
	36-82	---	---	---	0	0	
McNair medial coarse sandy loam----------	0-3	---	---	---	0	0	
	3-6	5-12	30-85	5.1-7.3	0	0	
	6-16	5-12	30-45	5.1-7.3	0	0	
	16-25	10-18	30-45	4.5-6.5	0	0	
	25-33	10-25	30-45	4.5-6.5	0	0	
	33-48	10-25	30-45	4.5-6.5	0	0	
	48-57	8-25	30-45	4.5-5.5	0	0	
	57-88	---	---	---	0	0	
Greenwell medial sandy loam----------	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-5	8-11	30-85	4.5-6.5	0	0	
	5-10	8-11	30-85	4.5-6.5	0	0	
	10-18	10-15	30-45	4.5-6.5	0	0	
	18-23	12-18	30-45	4.5-5.5	0	0	
	23-32	12-18	30-45	4.5-5.5	0	0	
	32	---	---	---	0	0	
930:							
Shakeridge gravelly medial coarse sandy loam	0-2	---	---	---	0	0	
	2-4	5-12	35-60	5.6-6.5	0	0	
	4-7	5-12	35-55	5.6-6.5	0	0	
	7-19	5-18	35-55	4.5-6.5	0	0	
	19-25	5-18	35-55	4.5-6.5	0	0	
	25-36	5-18	35-55	4.5-6.1	0	0	
	36-55	5-18	35-55	4.5-6.0	0	0	
	55-71	5-18	35-55	4.5-6.1	0	0	
	71-87	5-18	35-55	4.5-6.0	0	0	
Timberisland very gravelly medial sandy loam	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-6	5-18	35-90	5.1-6.5	0	0	
	6-14	5-18	35-55	5.1-6.5	0	0	
	14-25	8-18	35-55	5.1-6.5	0	0	
	25-35	10-22	35-55	4.5-6.5	0	0	
	35-48	10-22	35-55	4.5-6.5	0	0	
	48	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
931:							
Shakeridge gravelly medial coarse sandy loam	0-2	---	---	---	0	0	
	2-4	5-12	35-60	5.6-6.5	0	0	
	4-7	5-12	35-55	5.6-6.5	0	0	
	7-19	5-18	35-55	4.5-6.5	0	0	
	19-25	5-18	35-55	4.5-6.5	0	0	
	25-36	5-18	35-55	4.5-6.1	0	0	
	36-55	5-18	35-55	4.5-6.0	0	0	
	55-71	5-18	35-55	4.5-6.1	0	0	
	71-87	5-18	35-55	4.5-6.0	0	0	
Mudwash gravelly medial sandy loam----------	0-1	---	---	---	0	0	
	1-4	---	---	---	0	0	
	4-8	8-18	35-45	5.1-6.5	0	0	
	8-13	8-18	35-45	5.1-6.5	0	0	
	13-26	12-22	35-45	4.5-6.5	0	0	
	26-35	18-38	35-55	4.0-6.5	0	0	
	35-52	18-38	35-55	4.0-6.5	0	0	
	52-72	15-28	35-55	4.0-6.0	0	0	
	72-89	---	---	---	0	0	
Timberisland very gravelly medial sandy loam	0-2	---	---	---	0	0	
	2-3	---	---	---	0	0	
	3-6	5-18	35-90	5.1-6.5	0	0	
	6-14	5-18	35-55	5.1-6.5	0	0	
	14-25	8-18	35-55	5.1-6.5	0	0	
	25-35	10-22	35-55	4.5-6.5	0	0	
	35-48	10-22	35-55	4.5-6.5	0	0	
	48	---	---	---	0	0	
932:							
Shakeridge gravelly medial coarse sandy loam	0-2	---	---	---	0	0	
	2-4	5-12	35-60	5.6-6.5	0	0	
	4-7	5-12	35-55	5.6-6.5	0	0	
	7-19	5-18	35-55	4.5-6.5	0	0	
	19-25	5-18	35-55	4.5-6.5	0	0	
	25-36	5-18	35-55	4.5-6.1	0	0	
	36-55	5-18	35-55	4.5-6.0	0	0	
	55-71	5-18	35-55	4.5-6.1	0	0	
	71-87	5-18	35-55	4.5-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
932:							
Mudwash gravelly medial sandy loam----------	0-1	---	---	---	0	0	
	1-4	---	---	---	0	0	
	4-8	8-18	35-45	5.1-6.5	0	0	
	8-13	8-18	35-45	5.1-6.5	0	0	
	13-26	12-22	35-45	4.5-6.5	0	0	
	26-35	18-38	35-55	4.0-6.5	0	0	
	35-52	18-38	35-55	4.0-6.5	0	0	
	52-72	15-28	35-55	4.0-6.0	0	0	
	72-89	---	---	---	0	0	
933:							
Shakeridge gravelly medial coarse sandy loam	0-2	---	---	---	0	0	
	2-4	5-12	35-60	5.6-6.5	0	0	
	4-7	5-12	35-55	5.6-6.5	0	0	
	7-19	5-18	35-55	4.5-6.5	0	0	
	19-25	5-18	35-55	4.5-6.5	0	0	
	25-36	5-18	35-55	4.5-6.1	0	0	
	36-55	5-18	35-55	4.5-6.0	0	0	
	55-71	5-18	35-55	4.5-6.1	0	0	
	71-87	5-18	35-55	4.5-6.0	0	0	
934:							
Mudwash gravelly medial sandy loam----------	0-1	---	---	---	0	0	
	1-4	---	---	---	0	0	
	4-8	8-18	35-45	5.1-6.5	0	0	
	8-13	8-18	35-45	5.1-6.5	0	0	
	13-26	12-22	35-45	4.5-6.5	0	0	
	26-35	18-38	35-55	4.0-6.5	0	0	
	35-52	18-38	35-55	4.0-6.5	0	0	
	52-72	15-28	35-55	4.0-6.0	0	0	
	72-89	---	---	---	0	0	
939:							
Fluvaquentic Humaquepts very fine sandy loam	0-7	12-15	11-14	5.5-6.0	0	0	
	7-15	12-15	11-14	5.5-6.0	0	0	
	15-22	20-25	17-22	5.5-6.0	0	0	
	22-29	20-25	17-21	5.5-6.0	0	0	
	29-36	20-25	16-20	5.5-6.0	0	0	
	36-45	27-30	21-24	5.1-5.8	0	0	
	45-60	20-27	16-21	5.1-5.8	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
940:							
Dejonah gravelly loam----------	0-1	---	---	---	0	0	
	1-4	10-18	20-35	5.1-6.5	0	0	
	4-10	18-25	20-35	5.1-6.5	0	0	
	10-16	15-27	15-35	4.5-6.5	0	0	
	16-28	15-27	4.0-10	4.5-6.5	0	0	
	28-37	15-27	4.0-10	4.5-6.5	0	0	
	37-53	8-20	4.0-10	4.5-6.0	0	0	
	53-60	8-20	4.0-10	4.5-6.0	0	0	
Stagpoint loam----------	0-0.5	---	---	---	0	0	
	0.5-4	8-18	20-35	5.1-6.5	0	0	
	4-10	10-25	15-20	5.1-6.5	0	0	
	10-17	10-25	10-20	5.1-6.5	0	0	
	17-23	15-32	4.0-20	4.5-6.5	0	0	
	23-34	15-32	4.0-20	4.5-6.5	0	0	
	34-49	12-18	4.0-20	4.5-6.0	0	0	
	49-64	12-18	4.0-20	4.5-6.0	0	0	
	64-86	9-15	4.0-20	4.5-6.0	0	0	
941:							
Dejonah gravelly loam----------	0-1	---	---	---	0	0	
	1-4	10-18	20-35	5.1-6.5	0	0	
	4-10	18-25	20-35	5.1-6.5	0	0	
	10-16	15-27	15-35	4.5-6.5	0	0	
	16-28	15-27	4.0-10	4.5-6.5	0	0	
	28-37	15-27	4.0-10	4.5-6.5	0	0	
	37-53	8-20	4.0-10	4.5-6.0	0	0	
	53-60	8-20	4.0-10	4.5-6.0	0	0	
Stagpoint loam----------	0-0.5	---	---	---	0	0	
	0.5-4	8-18	20-35	5.1-6.5	0	0	
	4-10	10-25	15-20	5.1-6.5	0	0	
	10-17	10-25	10-20	5.1-6.5	0	0	
	17-23	15-32	4.0-20	4.5-6.5	0	0	
	23-34	15-32	4.0-20	4.5-6.5	0	0	
	34-49	12-18	4.0-20	4.5-6.0	0	0	
	49-64	12-18	4.0-20	4.5-6.0	0	0	
	64-86	9-15	4.0-20	4.5-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
942:							
Stagpoint loam	0-0.5	---	---	---	0	0	
	0.5-4	8-18	20-35	5.1-6.5	0	0	
	4-10	10-25	15-20	5.1-6.5	0	0	
	10-17	10-25	10-20	5.1-6.5	0	0	
	17-23	15-32	4.0-20	4.5-6.5	0	0	
	23-34	15-32	4.0-20	4.5-6.5	0	0	
	34-49	12-18	4.0-20	4.5-6.0	0	0	
	49-64	12-18	4.0-20	4.5-6.0	0	0	
	64-86	9-15	4.0-20	4.5-6.0	0	0	
Dejonah gravelly loam	0-1	---	---	---	0	0	
	1-4	10-18	20-35	5.1-6.5	0	0	
	4-10	18-25	20-35	5.1-6.5	0	0	
	10-16	15-27	15-35	4.5-6.5	0	0	
	16-28	15-27	4.0-10	4.5-6.5	0	0	
	28-37	15-27	4.0-10	4.5-6.5	0	0	
	37-53	8-20	4.0-10	4.5-6.0	0	0	
	53-60	8-20	4.0-10	4.5-6.0	0	0	
948:							
Stagpoint loam	0-0.5	---	---	---	0	0	
	0.5-4	8-18	20-35	5.1-6.5	0	0	
	4-10	10-25	15-20	5.1-6.5	0	0	
	10-17	10-25	10-20	5.1-6.5	0	0	
	17-23	15-32	4.0-20	4.5-6.5	0	0	
	23-34	15-32	4.0-20	4.5-6.5	0	0	
	34-49	12-18	4.0-20	4.5-6.0	0	0	
	49-64	12-18	4.0-20	4.5-6.0	0	0	
	64-86	9-15	4.0-20	4.5-6.0	0	0	
Dejonah gravelly loam	0-1	---	---	---	0	0	
	1-4	10-18	20-35	5.1-6.5	0	0	
	4-10	18-25	20-35	5.1-6.5	0	0	
	10-16	15-27	15-35	4.5-6.5	0	0	
	16-28	15-27	4.0-10	4.5-6.5	0	0	
	28-37	15-27	4.0-10	4.5-6.5	0	0	
	37-53	8-20	4.0-10	4.5-6.0	0	0	
	53-60	8-20	4.0-10	4.5-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
949:							
Rogerville taxadjunct fine sandy loam-------	0-2	---	---	---	0	0	
	2-4	8-12	1.6-2.4	4.5-6.5	0	0	
	4-7	15-22	3.0-4.5	5.1-6.5	0	0	
	7-21	15-22	3.0-4.5	5.1-6.5	0	0	
	21-26	15-22	3.0-4.5	5.1-6.5	0	0	
	26-33	24-28	4.8-5.7	4.5-5.5	0	0	
	33-44	24-28	---	4.5-5.5	0	0	
	44-57	24-28	---	4.5-5.5	0	0	
	57	---	---	---	0	0	
950:							
Lumpkin taxadjunct very gravelly medial very fine sandy loam----------	0-4	10-15	12-30	4.5-6.1	0	0	
	4-9	14-18	16-32	5.6-6.1	0	0	
	9	---	---	---	---	---	
Rock outcrop, olivine basalt, andesite, or mudflow.							
Powderhouse medial sandy loam----------	0-2	---	---	---	0	0	
	2-4	8-12	30-85	5.0-6.5	0	0	
	4-11	8-12	30-45	5.5-6.5	0	0	
	11-27	10-18	30-45	5.0-6.5	0	0	
	27-36	10-12	30-45	4.5-5.5	0	0	
	36-82	---	---	---	0	0	
951:							
Lumpkin taxadjunct very gravelly medial very fine sandy loam----------	0-4	10-15	12-30	4.5-6.1	0	0	
	4-9	14-18	16-32	5.6-6.1	0	0	
	9	---	---	---	---	---	
Rock outcrop, andesite.							
Powderhouse medial sandy loam----------	0-2	---	---	---	0	0	
	2-4	8-12	30-85	5.0-6.5	0	0	
	4-11	8-12	30-45	5.5-6.5	0	0	
	11-27	10-18	30-45	5.0-6.5	0	0	
	27-36	10-12	30-45	4.5-5.5	0	0	
	36-82	---	---	---	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Sa
	In	Pct	meq/100g	pH	Pct	Pct	
960:							
Surnuf gravelly loam, high elevation--------	0-0.5	---	---	---	0	0	
	0.5-6	10-18	3.8-6.8	5.6-6.5	0	0	
	6-10	18-25	6.5-9.1	5.1-6.0	0	0	
	10-20	35-40	12-14	5.1-6.0	0	0	
	20-28	35-40	12-14	5.1-6.0	0	0	
	28-38	40-60	14-22	5.1-6.0	0	0	
	38-52	40-60	14-22	5.1-6.0	0	0	
	52-67	40-60	14-22	5.1-6.0	0	0	
	67-84	40-60	14-22	5.1-6.0	0	0	
961:							
Surnuf gravelly loam, high elevation--------	0-0.5	---	---	---	0	0	
	0.5-6	10-18	3.8-6.8	5.6-6.5	0	0	
	6-10	18-25	6.5-9.1	5.1-6.0	0	0	
	10-20	35-40	12-14	5.1-6.0	0	0	
	20-28	35-40	12-14	5.1-6.0	0	0	
	28-38	40-60	14-22	5.1-6.0	0	0	
	38-52	40-60	14-22	5.1-6.0	0	0	
	52-67	40-60	14-22	5.1-6.0	0	0	
	67-84	40-60	14-22	5.1-6.0	0	0	
962:							
Surnuf gravelly loam, high elevation--------	0-0.5	---	---	---	0	0	
	0.5-6	10-18	3.8-6.8	5.6-6.5	0	0	
	6-10	18-25	6.5-9.1	5.1-6.0	0	0	
	10-20	35-40	12-14	5.1-6.0	0	0	
	20-28	35-40	12-14	5.1-6.0	0	0	
	28-38	40-60	14-22	5.1-6.0	0	0	
	38-52	40-60	14-22	5.1-6.0	0	0	
	52-67	40-60	14-22	5.1-6.0	0	0	
	67-84	40-60	14-22	5.1-6.0	0	0	
963:							
Surnuf gravelly loam, high elevation--------	0-0.5	---	---	---	0	0	
	0.5-6	10-18	3.8-6.8	5.6-6.5	0	0	
	6-10	18-25	6.5-9.1	5.1-6.0	0	0	
	10-20	35-40	12-14	5.1-6.0	0	0	
	20-28	35-40	12-14	5.1-6.0	0	0	
	28-38	40-60	14-22	5.1-6.0	0	0	
	38-52	40-60	14-22	5.1-6.0	0	0	
	52-67	40-60	14-22	5.1-6.0	0	0	
	67-84	40-60	14-22	5.1-6.0	0	0	

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	S
	In	Pct	meq/100g	pH	Pct	Pct	
990.							
Riverwash, frequently flooded							
991:							
Xerofluvents sandy loam, frequently flooded	0-6	2-10	10-20	6.1-7.3	0	0	
	6-14	1-8	7.0-15	6.6-8.4	0	0	
	14-26	1-8	7.0-15	6.6-8.4	0	0	
	26-37	1-8	7.0-15	6.6-8.4	0	0	
	37-43	4-12	10-20	6.6-7.8	0	0	
	43-47	1-8	7.0-15	6.6-8.4	0	0	
	47-54	1-8	7.0-15	6.6-8.4	0	0	
	54-72	1-8	7.0-15	6.6-8.4	0	0	
	72-80	1-8	7.0-15	6.6-8.4	0	0	
995.							
Pits, gravel							
996.							
Dumps, excavated material							
997.							
Pits							
998.							
Dumps, landfill							
999.							
Water							
DAM.							
Dam, manmade							

Table 24.--Water Features

(See text for definitions of terms used in this table. The annual frequency of ponding and flooding is the mos
class listed for the soil. Frequent flooding is more limiting than occasional flooding, and occasional fl
limiting than rare flooding. Absence of an entry indicates that the feature is not a concern or that data

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
100:								
Anita clay	D							
		January	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		February	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		March	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		May	0.0-1.7	0.8-1.7	0.0-0.2	Very brief	Rare	
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
Galt clay	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.2	Long	Occasional	
		May	0.0-3.3	1.7-3.3	0.0-0.2	Very brief	Rare	
		November	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
104:								
Bosquejo clay	D							
		January	1.0-5.0	---	0.0-0.5	Brief	Frequent	
		February	1.0-5.0	---	0.0-0.5	Brief	Frequent	
		March	1.0-5.0	---	0.0-0.5	Brief	Frequent	
		April	1.0-5.0	---	---	---	None	
		May	1.0-5.0	---	---	---	None	
		December	1.0-5.0	---	0.0-0.5	Brief	Frequent	
105:								
Busacca clay loam	C							
		January	2.5-6.7	---	0.0-0.3	Brief	Occasional	Ve
		February	2.5-6.7	---	0.0-0.3	Brief	Occasional	Ve
		March	2.5-6.7	---	0.0-0.3	Brief	Occasional	Ve
		April	2.5-6.7	---	---	---	None	
		December	2.5-6.7	---	0.0-0.3	Brief	Occasional	Ve

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
108:								
Tuscan gravelly loam	D							
		January	0.2-1.7	0.8-1.7	---	---	None	
		February	0.2-1.7	0.8-1.7	---	---	None	
		March	0.2-1.7	0.8-1.7	---	---	None	
		November	0.2-1.7	0.8-1.7	---	---	None	
		December	0.2-1.7	0.8-1.7	---	---	None	
Igo gravelly loam	D							
		January	0.2-0.8	0.3-0.8	---	---	None	
		February	0.2-0.8	0.3-0.8	---	---	None	
		March	0.2-0.8	0.3-0.8	---	---	None	
		December	0.2-0.8	0.3-0.8	---	---	None	
Anita clay	D							
		January	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		February	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		March	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		May	0.0-1.7	0.8-1.7	0.0-0.2	Very brief	Rare	
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
109:								
Bosquejo clay loam	C							
		January	1.0-5.0	---	0.0-0.5	Brief	Occasional	
		February	1.0-5.0	---	0.0-0.5	Brief	Occasional	
		March	1.0-5.0	---	0.0-0.5	Brief	Occasional	
		April	1.0-5.0	---	---	---	None	
		May	1.0-5.0	---	---	---	None	
		December	1.0-5.0	---	0.0-0.5	Brief	Occasional	
110:								
Bosquejo silt loam, overwash, occasionally flooded	C							
		January	1.0-5.0	---	0.0-0.3	Brief	Occasional	
		February	1.0-5.0	---	0.0-0.3	Brief	Occasional	
		March	1.0-5.0	---	0.0-0.3	Brief	Occasional	
		April	1.0-5.0	---	---	---	None	
		May	1.0-5.0	---	---	---	None	
		December	1.0-5.0	---	0.0-0.3	Brief	Occasional	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
111yu:								
Auburn loam	D							
		Jan-Dec	---	---	---	---	None	
Sobrante loam	B							
		Jan-Dec	---	---	---	---	None	
114yu:								
Auburn gravelly loam	D							
		Jan-Dec	---	---	---	---	None	
Sobrante gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
118:								
Xerorthents, tailings	A							
		January	5.0-6.7	---	---	---	None	
		February	5.0-6.7	---	---	---	None	
		March	5.0-6.7	---	---	---	None	
		April	5.0-6.7	---	---	---	None	Ve
		May	5.0-6.7	---	---	---	None	
		June	5.0-6.7	---	---	---	None	
		July	5.0-6.7	---	---	---	None	
		December	5.0-6.7	---	---	---	None	Ve
118co:								
Clear Lake clay, frequently flooded	D							
		January	4.0-6.0	>6.0	---	---	None	
		February	4.0-6.0	>6.0	---	---	None	
		March	4.0-6.0	>6.0	---	---	None	
		April	4.0-6.0	>6.0	---	---	None	
		December	4.0-6.0	>6.0	---	---	None	
119:								
Xerorthents, tailings	A							
		January	5.0-6.7	---	---	---	None	
		February	5.0-6.7	---	---	---	None	
		March	5.0-6.7	---	---	---	None	
		April	5.0-6.7	---	---	---	None	Ve
		May	5.0-6.7	---	---	---	None	
		June	5.0-6.7	---	---	---	None	
		July	5.0-6.7	---	---	---	None	
		December	5.0-6.7	---	---	---	None	Ve

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
119:								
Urban land.								
119yu:								
Auburn gravelly loam	D							
		Jan-Dec	---	---	---	---	None	
Sobrante gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop.								
120:								
Gridley taxadjunct clay loam	D							
		January	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		February	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		March	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		April	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Rare	
		November	---	---	0.0-0.2	Brief	Occasional	
		December	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
121:								
Boga loam	C							
		January	1.7-6.7	5.0-6.7	0.0-0.1	Very brief	Occasional	
		February	1.7-6.7	5.0-6.7	0.0-0.1	Very brief	Occasional	
		March	1.7-6.7	5.0-6.7	0.0-0.1	Very brief	Occasional	
		April	1.7-6.7	5.0-6.7	---	---	None	
		May	1.7-6.7	5.0-6.7	---	---	None	
		December	1.7-6.7	5.0-6.7	0.0-0.1	Very brief	Occasional	
Loemstone loam	C							
		January	1.7-5.0	3.3-5.0	0.0-0.1	Very brief	Occasional	
		February	1.5-5.0	3.3-5.0	0.0-0.1	Very brief	Occasional	
		March	1.5-5.0	3.3-5.0	0.0-0.1	Very brief	Occasional	
		April	1.5-5.0	3.3-5.0	---	---	None	
		May	1.7-5.0	3.3-5.0	---	---	None	
		December	1.7-5.0	3.3-5.0	0.0-0.1	Very brief	Occasional	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
121su:								
Columbia fine sandy loam, frequently flooded	C							
		January	3.0-5.0	5.0-5.0	---	---	None	
		February	3.0-5.0	5.0-5.0	---	---	None	
		March	3.0-5.0	5.0-5.0	---	---	None	
		April	3.0-5.0	5.0-5.0	---	---	None	
		December	3.0-5.0	5.0-5.0	---	---	None	
125:								
Gridley taxadjunct loam	D							
		January	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		February	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		March	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		April	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Rare	
		November	---	---	0.0-0.2	Brief	Occasional	
		December	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
Calcic Haploxerolls sandy loam	B							
		January	0.9-5.0	1.7-5.0	---	---	None	Ve
		February	0.9-5.0	1.7-5.0	---	---	None	Ve
		March	0.9-5.0	1.7-5.0	---	---	None	Ve
		April	0.9-5.0	1.7-5.0	---	---	None	
		December	2.5-5.0	1.7-5.0	---	---	None	Ve
126:								
Liveoak sandy loam	B							
		January	0.9-3.3	---	---	---	None	Ve
		February	0.9-5.0	---	---	---	None	Ve
		March	0.9-5.0	---	---	---	None	Ve
		April	3.3-5.4	---	---	---	None	Ve
		December	3.3-6.2	---	---	---	None	Ve
127:								
Gridley taxadjunct loam	D							
		January	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		February	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		March	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		April	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Rare	
		November	---	---	0.0-0.2	Brief	Occasional	
		December	0.4-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
130:								
Eastbiggs loam	C							
		January	1.2-3.3	1.7-3.3	---	---	None	
		February	1.2-3.3	1.7-3.3	---	---	None	
		March	1.2-3.3	1.7-3.3	---	---	None	
		April	1.7-3.3	1.7-3.3	---	---	None	
		December	1.2-3.3	1.7-3.3	---	---	None	
133:								
Eastbiggs loam	C							
		January	1.2-3.3	1.7-3.3	---	---	None	
		February	1.2-3.3	1.7-3.3	---	---	None	
		March	1.2-3.3	1.7-3.3	---	---	None	
		April	1.7-3.3	1.7-3.3	---	---	None	
		December	1.2-3.3	1.7-3.3	---	---	None	
Galt clay loam	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.2	Long	Occasional	
		May	0.0-3.3	1.7-3.3	0.0-0.2	Very brief	Rare	
		November	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
136:								
Duric Xerarents, cut	D							
		January	0.0-1.7	0.5-1.7	0.0-0.5	Long	Frequent	
		February	0.0-1.7	0.5-1.7	0.0-0.5	Long	Frequent	
		March	0.3-1.7	0.5-1.7	0.0-0.5	Long	Frequent	
		April	0.3-1.7	0.5-1.7	0.0-0.2	Brief	Occasional	
		November	---	---	0.0-0.2	Brief	Occasional	
		December	0.0-1.7	0.5-1.7	0.0-0.5	Long	Frequent	
Duric Xerarents, fill	C							
		January	2.9-6.7	2.0-6.7	0.0-0.5	Brief	Rare	
		February	2.9-6.7	2.0-6.7	0.0-0.5	Brief	Rare	
		March	3.2-6.7	2.0-6.7	0.0-0.5	Brief	Rare	
		April	3.6-6.7	2.0-6.7	0.0-0.5	Brief	Rare	
		December	2.9-6.7	2.0-6.7	0.0-0.5	Brief	Rare	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
136:								
Eastbiggs fine sandy loam, leveled-------	C							
		January	1.2-3.3	1.7-3.3	0.0-0.5	Brief	Frequent	
		February	1.2-3.3	1.7-3.3	0.0-0.5	Brief	Frequent	
		March	1.2-3.3	1.7-3.3	0.0-0.5	Brief	Frequent	
		April	1.2-3.3	1.7-3.3	0.0-0.3	Very brief	Occasional	
		December	1.2-3.3	1.7-3.3	0.0-0.5	Brief	Frequent	
138su:								
Liveoak sandy clay loam------------------	B							
		January	0.9-3.3	---	---	---	None	Ve
		February	0.9-5.0	---	---	---	None	Ve
		March	0.9-5.0	---	---	---	None	Ve
		April	3.3-5.4	---	---	---	None	Ve
		December	3.3-6.2	---	---	---	None	Ve
139su:								
Liveoak taxadjunct loam, frequently flooded----------	B							
		January	4.0-5.0	4.0-5.0	---	---	None	
		February	4.0-5.0	4.0-5.0	---	---	None	
		March	4.0-5.0	4.0-5.0	---	---	None	
		April	4.0-5.0	4.0-5.0	---	---	None	
		December	4.0-5.0	4.0-5.0	---	---	None	
Galt taxadjunct clay loam, frequently flooded----------	C							
		January	1.2-2.9	1.7-4.0	---	---	None	
		February	1.2-2.9	1.7-4.0	---	---	None	
		March	1.2-2.9	1.7-4.0	---	---	None	
		April	1.2-2.9	1.7-4.0	---	---	None	
		December	1.0-2.0	1.7-2.9	---	---	None	
143su:								
Marcum clay loam-------------------------	C							
		Jan-Dec	---	---	---	---	None	
Gridley clay loam------------------------	C							
		Jan-Dec	---	---	---	---	None	
149yu:								
Flanly sandy loam------------------------	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
150:								
Columbia stratified sand to fine sandy loam	D							
		January	1.7-6.0	---	---	---	None	
		February	1.7-6.0	---	---	---	None	
		March	1.7-6.0	---	---	---	None	
		April	1.7-6.0	---	---	---	None	
		November	---	---	---	---	None	Ve
		December	1.7-6.0	---	---	---	None	
150su:								
Olashes sandy loam	B							
		Jan-Dec	---	---	---	---	None	
151yu:								
Flanly sandy loam	B							
		Jan-Dec	---	---	---	---	None	
152:								
Gianella fine sandy loam, frequently flooded	A							
		January	2.7-6.7	---	---	---	None	
		February	2.7-6.7	---	---	---	None	
		March	2.7-6.7	---	---	---	None	
		December	2.7-6.7	---	---	---	None	
153:								
Gianella sandy loam, frequently flooded	A							
		January	2.7-6.7	---	---	---	None	
		February	2.7-6.7	---	---	---	None	
		March	2.7-6.7	---	---	---	None	
		December	2.7-6.7	---	---	---	None	
154:								
Gianella silt loam, frequently flooded	A							
		January	2.7-6.7	---	---	---	None	
		February	2.7-6.7	---	---	---	None	
		March	2.7-6.7	---	---	---	None	
		December	2.7-6.7	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
158:								
Gianella fine sandy loam, occasionally flooded	A							
		January	2.7-6.7	---	---	---	None	
		February	2.7-6.7	---	---	---	None	
		March	2.7-6.7	---	---	---	None	
		December	2.7-6.7	---	---	---	None	
160:								
Gianella loam, occasionally flooded	A							
		January	2.7-6.7	---	---	---	None	
		February	2.7-6.7	---	---	---	None	
		March	2.7-6.7	---	---	---	None	
		December	2.7-6.7	---	---	---	None	
161:								
Gianella fine sandy loam, rarely flooded	A							
		January	2.7-6.7	---	---	---	None	
		February	2.7-6.7	---	---	---	None	
		March	2.7-6.7	---	---	---	None	
		December	2.7-6.7	---	---	---	None	
162:								
Gianella loam, rarely flooded	A							
		January	2.7-6.7	---	---	---	None	
		February	2.7-6.7	---	---	---	None	
		March	2.7-6.7	---	---	---	None	
		December	2.7-6.7	---	---	---	None	
163yu:								
Holillipah loamy sand	A							
		January	---	---	---	---	None	
		February	---	---	---	---	None	
		March	---	---	---	---	None	
		April	---	---	---	---	None	
		December	---	---	---	---	None	
165yu:								
Holland loam	B							
		Jan-Dec	---	---	---	---	None	
Hoda loam	C							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
165yu:								
Hotaw loam	C							
		Jan-Dec	---	---	---	---	None	
173yu:								
Hotaw loam	C							
		Jan-Dec	---	---	---	---	None	
Chawanakee gravelly sandy loam	C							
		Jan-Dec	---	---	---	---	None	
Holland loam	B							
		Jan-Dec	---	---	---	---	None	
175:								
Farwell clay loam, rarely flooded	B							
		January	---	---	---	---	None	
		February	---	---	---	---	None	
		March	---	---	---	---	None	
		December	---	---	---	---	None	
176:								
Farwell loam, occasionally flooded	B							
		January	---	---	---	---	None	
		February	---	---	---	---	None	
		March	---	---	---	---	None	
		December	---	---	---	---	None	
176yu:								
Jocal loam	B							
		Jan-Dec	---	---	---	---	None	
177:								
Farwell silt loam, occasionally flooded	B							
		January	---	---	---	---	None	
		February	---	---	---	---	None	
		March	---	---	---	---	None	
		December	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
178:								
Arbuckle gravelly loam----------	B							
		January	---	---	---	---	None	Ve
		February	---	---	---	---	None	Ve
		March	---	---	---	---	None	Ve
		December	---	---	---	---	None	Ve
179:								
Moda taxadjunct loam----------	D							
		January	0.0-3.3	1.7-3.3	0.0-0.2	Long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.2	Long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.2	Long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	
		November	---	---	0.0-0.1	Brief	Occasional	
		December	0.0-3.3	1.7-3.3	0.0-0.2	Long	Frequent	
Arbuckle gravelly loam----------	B							
		January	---	---	---	---	None	Ve
		February	---	---	---	---	None	Ve
		March	---	---	---	---	None	Ve
		December	---	---	---	---	None	Ve
180:								
Dodgeland silty clay loam, occasionally flooded----------	D							
		January	0.0-6.7	---	0.0-0.5	Long	Frequent	
		February	0.0-6.7	---	0.0-0.5	Long	Frequent	
		March	0.0-6.7	---	0.0-0.5	Long	Frequent	
		April	0.0-6.7	---	0.0-0.2	Brief	Occasional	
		May	0.0-6.7	---	---	---	None	
		November	---	---	0.0-0.2	Brief	Occasional	
		December	0.0-6.7	---	0.0-0.5	Long	Frequent	
181:								
Dodgeland silty clay loam, frequently flooded----------	D							
		January	0.0-6.7	---	0.0-0.5	Long	Frequent	
		February	0.0-6.7	---	0.0-0.5	Long	Frequent	
		March	0.0-6.7	---	0.0-0.5	Long	Frequent	
		April	0.0-6.7	---	0.0-0.2	Brief	Occasional	
		May	0.0-6.7	---	---	---	None	
		November	---	---	0.0-0.2	Brief	Occasional	
		December	0.0-6.7	---	0.0-0.5	Long	Frequent	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
188yu:								
Mariposa taxadjunct gravelly loam--------	C							
		Jan-Dec	---	---	---	---	None	
189:								
Esquon silt loam, overwash----------	D							
		January	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Ve
		February	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Ve
		March	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Ve
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	
		May	0.0-5.0	3.3-5.0	---	---	None	
		December	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Ve
189yu:								
Mariposa taxadjunct gravelly loam--------	C							
		Jan-Dec	---	---	---	---	None	
196yu:								
Mildred cobbly loam----------	D							
		Jan-Dec	---	---	---	---	None	
200:								
Parrott silt loam, occasionally flooded--	B							
		January	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Ve
		February	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Ve
		March	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Ve
		December	5.0-7.4	---	0.0-0.0	Very brief	Occasional	Ve
201:								
Parrott silt loam, frequently flooded----	B							
		January	5.0-7.4	---	0.0-0.0	Very brief	Occasional	
		February	5.0-7.4	---	0.0-0.0	Very brief	Occasional	
		March	5.0-7.4	---	0.0-0.0	Very brief	Occasional	
		December	5.0-7.4	---	0.0-0.0	Very brief	Occasional	
203:								
Kusalslough silty clay loam, occasionally flooded----------	C							
		January	1.2-6.0	---	0.0-0.3	Brief	Occasional	
		February	1.2-6.0	---	0.0-0.3	Brief	Occasional	
		March	1.2-6.0	---	0.0-0.3	Brief	Occasional	
		April	1.2-6.0	---	---	---	None	
		May	1.2-6.0	---	---	---	None	
		December	1.2-6.0	---	0.0-0.3	Brief	Occasional	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
205:								
Parrott silt loam, frequently flooded----	B							
		January	5.0-7.4	---	0.0-0.0	Very brief	Occasional	
		February	5.0-7.4	---	0.0-0.0	Very brief	Occasional	
		March	5.0-7.4	---	0.0-0.0	Very brief	Occasional	
		December	5.0-7.4	---	0.0-0.0	Very brief	Occasional	
Vermet silt loam, frequently flooded-----	D							
		January	0.0-6.7	---	0.0-2.0	Very long	Frequent	
		February	0.0-6.7	---	0.0-2.0	Very long	Frequent	
		March	0.0-6.7	---	0.0-2.0	Very long	Frequent	
		April	0.0-6.7	---	0.0-2.0	Long	Frequent	
		May	3.3-6.7	---	---	---	None	
		June	3.3-6.7	---	---	---	None	
		July	3.3-6.7	---	---	---	None	
		August	3.3-6.7	---	---	---	None	
		September	3.3-6.7	---	---	---	None	
		October	3.3-6.7	---	---	---	None	
		November	3.3-6.7	---	---	---	None	
		December	0.0-6.7	---	0.0-2.0	Very long	Frequent	
206:								
Islandbar sandy loam----------	A							
		Jan-Dec	---	---	---	---	None	
Chawanakee gravelly sandy loam----------	C							
		Jan-Dec	---	---	---	---	None	
207:								
Islandbar sandy loam----------	A							
		Jan-Dec	---	---	---	---	None	
Chawanakee gravelly sandy loam----------	C							
		Jan-Dec	---	---	---	---	None	
208:								
Islandbar sandy loam----------	A							
		Jan-Dec	---	---	---	---	None	
Chawanakee gravelly sandy loam----------	C							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
209:								
Islandbar sandy loam	A	Jan-Dec	---	---	---	---	None	
Chawanakee gravelly sandy loam	C	Jan-Dec	---	---	---	---	None	
210:								
Featherfalls sandy loam	B	Jan-Dec	---	---	---	---	None	
Islandbar sandy loam	A	Jan-Dec	---	---	---	---	None	
211:								
Featherfalls sandy loam	B	Jan-Dec	---	---	---	---	None	
Islandbar sandy loam	A	Jan-Dec	---	---	---	---	None	
212:								
Featherfalls sandy loam	B	Jan-Dec	---	---	---	---	None	
Islandbar sandy loam	A	Jan-Dec	---	---	---	---	None	
213:								
Featherfalls sandy loam	B	Jan-Dec	---	---	---	---	None	
Islandbar sandy loam	A	Jan-Dec	---	---	---	---	None	
214:								
Crystalhill gravelly coarse sandy loam	A	Jan-Dec	---	---	---	---	None	
Oregongulch gravelly sandy loam	B	Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
214:								
Craigsaddle coarse sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, trondhjemite.								
215:								
Crystalhill gravelly coarse sandy loam---	A							
		Jan-Dec	---	---	---	---	None	
Oregongulch gravelly sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Craigsaddle coarse sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, trondhjemite.								
216:								
Crystalhill gravelly coarse sandy loam---	A							
		Jan-Dec	---	---	---	---	None	
Oregongulch gravelly sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Craigsaddle coarse sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, trondhjemite.								
217:								
Crystalhill gravelly coarse sandy loam---	A							
		Jan-Dec	---	---	---	---	None	
Oregongulch gravelly sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Craigsaddle coarse sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, trondhjemite.								

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
218:								
Rock outcrop, quartz diorite.								
Lithic Xerorthents gravelly sandy loam---	D							
		Jan-Dec	---	---	---	---	None	
Chawanakee gravelly sandy loam----------	C							
		Jan-Dec	---	---	---	---	None	
219:								
Rock outcrop, quartz diorite.								
Lithic Xerorthents gravelly sandy loam---	D							
		Jan-Dec	---	---	---	---	None	
Chawanakee gravelly sandy loam----------	C							
		Jan-Dec	---	---	---	---	None	
220:								
Esquon clay, frequently flooded----------	D							
		January	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	
		February	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	
		March	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	
		May	0.0-5.0	3.3-5.0	---	---	None	
		December	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	
Clear Lake silty clay loam, overwash-----	D							
		January	0.0-6.7	---	0.0-0.5	Very long	Frequent	
		February	0.0-6.7	---	0.0-0.5	Very long	Frequent	
		March	0.0-6.7	---	0.0-0.5	Very long	Frequent	
		April	0.0-6.7	---	0.0-0.2	Long	Occasional	
		May	0.0-6.7	---	---	---	None	
		June	3.3-6.7	---	---	---	None	
		July	3.3-6.7	---	---	---	None	
		August	3.3-6.7	---	---	---	None	
		September	3.3-6.7	---	---	---	None	
		October	3.3-6.7	---	---	---	None	
		November	3.3-6.7	---	0.0-0.2	Long	Occasional	
		December	0.0-6.7	---	0.0-0.5	Very long	Frequent	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
221yu:								
Sites loam	C							
		Jan-Dec	---	---	---	---	None	
222yu:								
Sites loam	C							
		Jan-Dec	---	---	---	---	None	
225yu:								
Sites gravelly loam, bedrock substratum	C							
		Jan-Dec	---	---	---	---	None	
226yu:								
Sites gravelly loam, bedrock substratum	C							
		Jan-Dec	---	---	---	---	None	
227yu:								
Sites gravelly loam, bedrock substratum	C							
		Jan-Dec	---	---	---	---	None	
242yu:								
Surnuf loam	B							
		Jan-Dec	---	---	---	---	None	
243yu:								
Surnuf loam	B							
		Jan-Dec	---	---	---	---	None	
244yu:								
Surnuf loam	B							
		Jan-Dec	---	---	---	---	None	
245:								
Surnuf loam	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
248yu:								
Trainer loam	B							
		January	3.0-5.0	---	---	---	None	
		February	3.0-5.0	---	---	---	None	
		March	3.0-5.0	---	---	---	None	
		April	3.0-5.0	---	---	---	None	
		May	3.0-5.0	---	---	---	None	
		June	3.0-5.0	---	---	---	None	
		July	3.0-5.0	---	---	---	None	
		August	3.0-5.0	---	---	---	None	
		September	3.0-5.0	---	---	---	None	
		October	3.0-5.0	---	---	---	None	
		November	3.0-5.0	---	---	---	None	
		December	3.0-5.0	---	---	---	None	
250:								
Llanoseco, occasionally flooded	D							
		January	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	
		February	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	
		March	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	
		April	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	Ve
		December	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	
252:								
Whitecabin silty clay, occasionally flooded	D							
		January	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	
		February	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	
		March	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	Ve
		May	0.0-5.0	3.3-5.0	---	---	None	
		December	2.2-4.4	3.3-5.0	0.0-0.5	Long	Frequent	
Ordferry silty clay, occasionally flooded	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	
		May	0.0-3.3	1.7-3.3	---	---	None	
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
252yu:								
Woodleaf gravelly loam----------	C							
		Jan-Dec	---	---	---	---	None	
253yu:								
Woodleaf gravelly loam----------	C							
		Jan-Dec	---	---	---	---	None	
255:								
Whitecabin silty clay loam, occasionally flooded----------	D							
		January	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	
		February	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	
		March	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	Ve
		May	0.0-5.0	3.3-5.0	---	---	None	
		December	2.2-4.4	3.3-5.0	0.0-0.5	Long	Frequent	
Ordferry silty clay, occasionally flooded----------	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	
		May	0.0-3.3	1.7-3.3	---	---	None	
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
256:								
Whitecabin silt loam, occasionally flooded----------	D							
		January	0.0-4.5	3.3-5.0	0.0-0.5	Long	Frequent	
		February	0.0-4.5	3.3-5.0	0.0-0.5	Long	Frequent	
		March	0.0-4.5	3.3-5.0	0.0-0.5	Long	Frequent	
		April	0.0-4.4	3.3-5.0	0.0-0.1	Brief	Occasional	Ve
		May	0.0-4.4	3.3-5.0	---	---	None	
		December	2.2-4.5	3.3-4.5	0.0-0.5	Long	Frequent	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
257:								
Llanoseco, frequently flooded----------	D							
		January	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	
		February	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	
		March	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	
		April	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	
		December	3.3-7.6	5.0-7.6	0.0-0.2	Brief	Rare	
258:								
Codora, occasionally flooded----------	C							
		January	3.1-6.7	---	0.0-0.0	Brief	Occasional	
		February	3.1-6.7	---	0.0-0.0	Brief	Occasional	
		March	3.1-6.7	---	0.0-0.0	Brief	Occasional	
		April	3.1-6.7	---	---	---	None	
		May	3.1-6.7	---	---	---	None	
		December	3.1-6.7	---	0.0-0.0	Brief	Occasional	
260:								
Ordferry silty clay, occasionally flooded----------	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	
		May	0.0-3.3	1.7-3.3	---	---	None	
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
280:								
Columbia taxadjunct stratified very fine sandy loam----------	D							
		January	0.0-2.0	---	---	---	None	Ve
		February	0.0-2.0	---	---	---	None	Ve
		March	0.0-2.0	---	---	---	None	Ve
		April	0.0-2.0	---	---	---	None	
		May	3.3-6.7	---	---	---	None	
		June	3.3-6.7	---	---	---	None	
		July	3.3-6.7	---	---	---	None	
		August	3.3-6.7	---	---	---	None	
		September	3.3-6.7	---	---	---	None	
		October	3.3-6.7	---	---	---	None	
		November	3.3-6.7	---	---	---	None	Ve
		December	0.0-2.0	---	---	---	None	Ve

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
290:								
Perkins gravelly loam	B							
		January	5.0-6.7	---	---	---	None	
		February	5.0-6.7	---	---	---	None	
		March	5.0-6.7	---	---	---	None	
		December	5.0-6.7	---	---	---	None	
300:								
Redsluff gravelly loam	B							
		January	2.9-6.7	---	---	---	None	Ve
		February	2.9-6.7	---	---	---	None	Ve
		March	2.9-6.7	---	---	---	None	Ve
		April	2.9-6.7	---	---	---	None	
		December	2.9-6.7	---	---	---	None	Ve
301:								
Wafap gravelly loam	C							
		January	1.1-5.0	3.3-5.0	---	---	None	Ve
		February	1.1-5.0	3.3-5.0	---	---	None	Ve
		March	1.1-5.0	3.3-5.0	---	---	None	Ve
		April	1.1-5.0	3.3-5.0	---	---	None	
		December	1.1-5.0	3.3-5.0	---	---	None	Ve
Hamslough clay	D							
		January	0.0-6.7	---	0.0-0.3	Brief	Frequent	
		February	0.0-6.7	---	0.0-0.3	Brief	Frequent	
		March	0.0-6.7	---	0.0-0.3	Brief	Frequent	
		April	0.0-6.7	---	0.0-0.2	Brief	Rare	
		November	---	---	0.0-0.2	Brief	Rare	
		December	0.0-6.7	---	0.0-0.3	Brief	Frequent	
302:								
Redtough loam	D							
		January	0.2-1.7	0.8-1.7	---	---	None	
		February	0.2-1.7	0.8-1.7	---	---	None	
		March	0.2-1.7	0.8-1.7	---	---	None	
		November	0.2-1.7	0.8-1.7	---	---	None	
		December	0.2-1.7	0.8-1.7	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
302:								
Redswale cobbly loam----------	D							
		January	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
		February	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
		March	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
		November	0.0-0.8	0.3-0.8	0.0-0.1	Very brief	Occasional	
		December	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
303:								
Munjar gravelly loam----------	C							
		January	1.0-3.3	1.7-3.3	---	---	None	
		February	1.0-3.3	1.7-3.3	---	---	None	
		March	1.0-3.3	1.7-3.3	---	---	None	
		April	1.0-3.3	1.7-3.3	---	---	None	
		December	1.0-3.3	1.7-3.3	---	---	None	
Tuscan taxadjunct gravelly clay loam-----	C							
		January	0.2-3.3	1.7-3.3	---	---	None	
		February	0.2-3.3	1.7-3.3	---	---	None	
		March	0.2-3.3	1.7-3.3	---	---	None	
		April	0.2-3.3	1.7-3.3	---	---	None	
		December	0.2-3.3	1.7-3.3	---	---	None	
Galt clay----------	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.2	Long	Occasional	
		May	0.0-3.3	1.7-3.3	0.0-0.2	Very brief	Rare	
		November	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
304:								
Redtough loam----------	D							
		Jan-Dec	---	---	---	---	None	
305:								
Redtough gravelly loam----------	D							
		January	0.2-1.7	0.8-1.7	---	---	None	
		February	0.2-1.7	0.8-1.7	---	---	None	
		March	0.2-1.7	0.8-1.7	---	---	None	
		November	0.2-1.7	0.8-1.7	---	---	None	
		December	0.2-1.7	0.8-1.7	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
305:								
Redswale loam	D							
		January	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
		February	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
		March	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
		November	0.0-0.8	0.3-0.8	0.0-0.1	Very brief	Occasional	
		December	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
Anita, gravelly duripan	D							
		January	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		February	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		March	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		May	0.0-1.7	0.8-1.7	0.0-0.2	Very brief	Rare	
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
306:								
Duric Xerarents, fill	D							
		January	0.0-3.3	2.0-6.7	0.2-0.5	Very long	Frequent	
		February	0.0-3.3	2.0-6.7	0.2-0.5	Very long	Frequent	
		March	0.0-3.3	2.0-6.7	0.2-0.5	Very long	Frequent	
		April	0.0-3.3	2.0-6.7	0.0-0.5	Long	Occasional	
		December	0.0-3.3	2.0-6.7	0.2-0.5	Very long	Frequent	
Duric Xerarents, cut	D							
		January	0.0-3.3	0.3-1.8	0.2-0.5	Very long	Frequent	
		February	0.0-3.3	0.3-1.8	0.2-0.5	Very long	Frequent	
		March	0.0-3.3	0.3-1.8	0.2-0.5	Very long	Frequent	
		April	0.0-3.3	0.3-1.8	0.0-0.5	Long	Occasional	
		December	0.0-3.3	0.3-1.8	0.2-0.5	Very long	Frequent	
307:								
Duric Xerarents clay loam, leveled	D							
		January	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	
		February	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	
		March	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	
		April	0.0-3.3	0.0-3.3	0.0-0.5	Long	Occasional	
		December	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	
310:								
Kimball loam	C							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
317:								
Thompsonflat loam	C							
		January	3.3-6.7	---	---	---	None	
		February	3.3-6.7	---	---	---	None	
		March	3.3-6.7	---	---	---	None	
		April	3.3-6.7	---	---	---	None	
		December	3.3-6.7	---	---	---	None	
318:								
Thompsonflat fine sandy loam	C							
		January	3.3-6.7	---	---	---	None	
		February	3.3-6.7	---	---	---	None	
		March	3.3-6.7	---	---	---	None	
		April	3.3-6.7	---	---	---	None	
		December	3.3-6.7	---	---	---	None	
Oroville gravelly fine sandy loam	C							
		January	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.1	Long	Occasional	
		December	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	
320:								
Vistarobles sandy loam	D							
		January	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
		February	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
		March	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
Redding loam	C							
		January	1.3-3.3	1.7-3.3	---	---	None	
		February	1.3-3.3	1.7-3.3	---	---	None	
		March	1.3-3.3	1.7-3.3	---	---	None	
		April	1.3-3.3	1.7-3.3	---	---	None	
		December	1.3-3.3	1.7-3.3	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
321:								
Durixeralfs, fine-loamy, gravelly fine sandy loam	C							
		January	1.7-3.3	1.7-3.3	---	---	None	
		February	1.7-3.3	1.7-3.3	---	---	None	
		March	1.7-3.3	1.7-3.3	---	---	None	
		April	1.7-3.3	1.7-3.3	---	---	None	
		December	1.7-3.3	1.7-3.3	---	---	None	
Durixeralfs, loamy-skeletal, gravelly fine sandy loam	D							
		January	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	
		February	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	
		March	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	
		April	0.0-1.7	0.8-1.7	0.0-0.3	Brief	Occasional	
		November	---	---	0.0-0.3	Long	Occasional	
		December	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	
Typic Petraquepts silty clay	D							
		January	0.0-1.7	0.8-1.7	0.0-0.5	Very long	Frequent	
		February	0.0-1.7	0.8-1.7	0.0-0.5	Very long	Frequent	
		March	0.0-1.7	0.8-1.7	0.0-0.5	Very long	Frequent	
		April	0.0-1.7	0.8-1.7	0.0-0.5	Brief	Occasional	
		May	0.0-1.7	0.8-1.7	---	---	None	
		October	---	---	0.0-0.5	Very brief	Rare	
		November	0.0-1.7	0.8-1.7	0.0-0.5	Brief	Occasional	
		December	0.0-1.7	0.8-1.7	0.0-0.5	Brief	Frequent	
330:								
Wilsoncreek loam, occasionally flooded	B							
		January	3.7-5.0	---	---	---	None	
		February	3.0-5.0	---	---	---	None	
		March	3.7-5.0	---	---	---	None	
		April	3.0-5.0	---	---	---	None	
		December	3.0-5.0	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
330:								
Trainer loam, occasionally flooded-------	B							
		January	3.0-5.0	---	---	---	None	
		February	3.0-5.0	---	---	---	None	
		March	3.0-5.0	---	---	---	None	Ve
		April	3.0-5.0	---	---	---	None	Ve
		May	3.0-5.0	---	---	---	None	
		June	3.0-5.0	---	---	---	None	
		July	3.0-5.0	---	---	---	None	
		August	3.0-5.0	---	---	---	None	
		September	3.0-5.0	---	---	---	None	
		October	3.0-5.0	---	---	---	None	
		November	3.0-5.0	---	---	---	None	
		December	3.0-5.0	---	---	---	None	
331:								
Thompsonflat loam------------------------	C							
		January	3.3-6.7	---	---	---	None	
		February	3.3-6.7	---	---	---	None	
		March	3.3-6.7	---	---	---	None	
		April	3.3-6.7	---	---	---	None	
		December	3.3-6.7	---	---	---	None	
335:								
Galt clay loam----------------------------	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.2	Long	Occasional	
		May	0.0-3.3	1.7-3.3	0.0-0.2	Very brief	Rare	
		November	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
336:								
Galt clay---------------------------------	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.2	Long	Occasional	
		May	0.0-3.3	1.7-3.3	0.0-0.2	Very brief	Rare	
		November	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
337:								
Galt clay loam----------	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.2	Long	Occasional	
		May	0.0-3.3	1.7-3.3	0.0-0.2	Very brief	Rare	
		November	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	
338:								
Oxyaquic Xerofluvents silt loam----------	B							
		January	3.0-6.7	---	0.0-0.2	Brief	Rare	
		February	3.0-6.7	---	0.0-0.2	Brief	Rare	
		March	3.0-6.7	---	0.0-0.2	Brief	Rare	
		April	3.0-6.7	---	0.0-0.2	Brief	Rare	
		December	3.0-6.7	---	0.0-0.2	Brief	Rare	
339:								
Oxyaquic Xerofluvents sandy loam, frequently flooded----------	B							
		January	3.0-6.7	---	0.0-0.5	Brief	Rare	
		February	3.0-6.7	---	0.0-0.5	Brief	Rare	
		March	3.0-6.7	---	0.0-0.5	Brief	Rare	
		April	3.0-6.7	---	---	---	None	
		December	3.0-6.7	---	0.0-0.5	Brief	Rare	
340:								
Rock outcrop, Lovejoy basalt.								
Thermalrocks very gravelly loam----------	D							
		Jan-Dec	---	---	---	---	None	
Campbellhills gravelly loam----------	C							
		January	0.3-5.0	3.3-5.0	---	---	None	
		February	0.3-5.0	3.3-5.0	---	---	None	
		March	0.3-5.0	3.3-5.0	---	---	None	
		April	0.3-5.0	3.3-5.0	---	---	None	
		December	0.3-5.0	3.3-5.0	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
341:								
Elsey loam	C							
		January	1.2-3.3	1.7-3.3	---	---	None	
		February	1.2-3.3	1.7-3.3	---	---	None	
		March	1.2-3.3	1.7-3.3	---	---	None	
		April	1.2-3.3	1.7-3.3	---	---	None	
		December	1.2-3.3	1.7-3.3	---	---	None	
Beatsonhollow gravelly loam	D							
		January	0.0-1.7	0.7-1.7	0.0-0.4	Brief	Frequent	
		February	0.0-1.7	0.7-1.7	0.0-0.4	Brief	Frequent	
		March	0.0-1.7	0.7-1.7	0.0-0.4	Very brief	Frequent	
		April	0.0-1.7	0.7-1.7	0.0-0.4	Very brief	Occasional	
		November	0.0-1.7	0.7-1.7	0.0-0.4	Very brief	Occasional	
		December	0.0-1.7	0.7-1.7	0.0-0.4	Brief	Frequent	
Campbellhills gravelly loam	C							
		January	0.3-5.0	3.3-5.0	---	---	None	
		February	0.3-5.0	3.3-5.0	---	---	None	
		March	0.3-5.0	3.3-5.0	---	---	None	
		April	0.3-5.0	3.3-5.0	---	---	None	
		December	0.3-5.0	3.3-5.0	---	---	None	
Rock outcrop, Lovejoy basalt.								
342:								
Thermalrocks very gravelly loam	D							
		Jan-Dec	---	---	---	---	None	
Beatsonhollow taxadjunct fine sandy loam	D							
		January	0.4-1.7	0.8-1.7	---	---	None	
		February	0.4-1.7	0.8-1.7	---	---	None	
		March	0.4-1.7	0.8-1.7	---	---	None	
		April	0.4-1.7	0.8-1.7	---	---	None	
		November	0.4-1.7	0.8-1.7	---	---	None	
		December	0.4-1.7	0.8-1.7	---	---	None	
Rock outcrop, Lovejoy basalt.								
343:								
Coalcanyon very cobbly loam	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
343:								
Coonhollow gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
344:								
Coalcanyon very cobbly loam	B							
		Jan-Dec	---	---	---	---	None	
Coonhollow gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, Lovejoy basalt.								
346:								
Cherotable loam	C							
		January	1.7-5.0	3.3-5.0	---	---	None	
		February	1.7-5.0	3.3-5.0	---	---	None	
		March	1.7-5.0	3.3-5.0	---	---	None	
		April	1.7-5.0	3.3-5.0	---	---	None	
		December	1.7-5.0	3.3-5.0	---	---	None	
Elsey loam	C							
		January	1.2-3.3	1.7-3.3	---	---	None	
		February	1.2-3.3	1.7-3.3	---	---	None	
		March	1.2-3.3	1.7-3.3	---	---	None	
		April	1.2-3.3	1.7-3.3	---	---	None	
		December	1.2-3.3	1.7-3.3	---	---	None	
347:								
Haplic Palexeralfs loam	B							
		January	5.0-6.7	5.0-6.7	---	---	None	
		February	5.0-6.7	5.0-6.7	---	---	None	
		March	5.0-6.7	5.0-6.7	---	---	None	
		April	5.0-6.7	5.0-6.7	---	---	None	
		December	5.0-6.7	5.0-6.7	---	---	None	
353:								
Cherokeespring gravelly silt loam	B							
		Jan-Dec	---	---	---	---	None	
355:								
Coalcanyon very cobbly loam	B							
		Jan-Dec	---	---	---	---	None	
Talus.								

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
356:								
Coalcanyon very cobbly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, basalt cliffs.								
Talus.								
Coonhollow gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
360:								
Typic Xerofluvents, coarse-loamy---------	A							
		January	1.7-7.9	---	---	---	None	
		February	1.7-7.9	---	---	---	None	
		March	2.5-7.9	---	---	---	None	
		April	3.3-7.9	---	---	---	None	
		December	3.3-7.9	---	---	---	None	
Typic Xerofluvents, sandy-skeletal-------	A							
		January	1.7-8.2	---	---	---	None	
		February	1.7-8.2	---	---	---	None	
		March	2.5-8.2	---	---	---	None	
		April	3.3-8.2	---	---	---	None	
		December	3.3-8.2	---	---	---	None	
361:								
Typic Xerofluvents, sandy-skeletal-------	A							
		January	1.7-8.2	---	---	---	None	
		February	1.7-8.2	---	---	---	None	
		March	2.5-8.2	---	---	---	None	
		April	3.3-8.2	---	---	---	None	
		December	3.3-8.2	---	---	---	None	
362:								
Ultic Haploxeralfs, sandstone, low elevation, very deep----------	B							
		Jan-Dec	---	---	---	---	None	
Ultic Haploxeralfs, sandstone, low elevation, deep----------	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
363:								
Ultic Haploxeralfs, sandstone, low elevation, very deep	B							
		Jan-Dec	---	---	---	---	None	
Ultic Haploxeralfs, sandstone, low elevation, deep	B							
		Jan-Dec	---	---	---	---	None	
364:								
Ultic Haploxeralfs, sandstone, low elevation, deep	B							
		Jan-Dec	---	---	---	---	None	
Ultic Haploxeralfs, sandstone, low elevation, very deep	B							
		Jan-Dec	---	---	---	---	None	
365:								
Palexerults gravelly loam	C							
		Jan-Dec	---	---	---	---	None	
366:								
Palexerults gravelly loam	C							
		Jan-Dec	---	---	---	---	None	
370:								
Palexerults gravelly loam	C							
		Jan-Dec	---	---	---	---	None	
375:								
Wickscorner loam	B							
		January	4.2-7.0	5.0-7.0	---	---	None	
		February	4.2-7.0	5.0-7.0	---	---	None	
		March	4.2-7.0	5.0-7.0	---	---	None	
		December	4.2-7.0	5.0-7.0	---	---	None	
376:								
Flagcanyon gravelly loam	C							
		January	1.3-3.3	1.7-3.3	---	---	None	
		February	1.3-3.3	1.7-3.3	---	---	None	
		March	1.3-3.3	1.7-3.3	---	---	None	
		December	1.3-3.3	1.7-3.3	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
376:								
Wickscorner loam	B							
		January	4.2-7.0	5.0-7.0	---	---	None	
		February	4.2-7.0	5.0-7.0	---	---	None	
		March	4.2-7.0	5.0-7.0	---	---	None	
		December	4.2-7.0	5.0-7.0	---	---	None	
377:								
Flagcanyon taxadjunct fine sandy loam	C							
		January	1.3-3.3	1.7-3.3	0.0-0.3	Very long	None	
		February	1.3-3.3	1.7-3.3	0.0-0.3	Very long	None	
		March	1.3-3.3	1.7-3.3	0.0-0.3	Very long	None	
		April	1.3-3.3	1.7-3.3	0.0-0.3	Very long	None	
		November	---	---	0.0-0.3	Long	None	
		December	1.3-3.3	1.7-3.3	0.0-0.3	Very long	None	
Durixeralfs, clayey-skeletal, loam	D							
		January	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	
		February	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	
		March	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	
		April	0.0-1.7	0.8-1.7	0.0-0.3	Brief	Occasional	
		November	---	---	0.0-0.3	Long	Occasional	
		December	0.0-1.7	0.8-1.7	0.0-0.3	Very long	Frequent	
Duraquerts gravelly clay	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	
		May	0.0-3.3	1.7-3.3	0.0-0.3	Brief	Occasional	
		October	---	---	0.0-0.2	Brief	Rare	
		November	---	---	0.0-0.3	Long	Occasional	
		December	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	
400:								
Subaco taxadjunct clay	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Ve
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Ve
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Ve
		April	0.0-3.3	1.7-3.3	0.0-0.5	Brief	Occasional	Ve
		May	0.0-3.3	1.7-3.3	---	---	None	
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Ve

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
415:								
Ignord fine sandy loam----------	B							
		January	---	---	---	---	None	
		February	---	---	---	---	None	
		March	---	---	---	---	None	
416:								
Calcic Haploxerolls sandy loam----------	B							
		January	0.9-5.0	1.7-5.0	---	---	None	Ve
		February	0.9-5.0	1.7-5.0	---	---	None	Ve
		March	0.9-5.0	1.7-5.0	---	---	None	Ve
		April	0.9-5.0	1.7-5.0	---	---	None	
		December	0.9-5.0	1.7-5.0	---	---	None	Ve
418:								
Almendra loam----------	B							
		Jan-Dec	---	---	---	---	None	
419:								
Conejo fine sandy loam, overwash---------	B							
		Jan-Dec	---	---	---	---	None	
420:								
Conejo clay loam----------	B							
		Jan-Dec	---	---	---	---	None	
425:								
Vina fine sandy loam----------	B							
		January	---	---	---	---	None	
		February	---	---	---	---	None	
		March	---	---	---	---	None	
426:								
Vina loam----------	B							
		Jan-Dec	---	---	---	---	None	
439:								
Oxyaquic Xerofluvents clay----------	D							
		January	1.5-6.7	---	0.0-0.6	Long	Frequent	
		February	1.5-6.7	---	0.0-0.6	Long	Frequent	
		March	1.5-6.7	---	0.0-0.6	Long	Frequent	
		April	1.5-6.7	---	0.0-0.6	Long	Frequent	
		December	1.5-6.7	---	0.0-0.6	Long	Frequent	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
440:								
Oxyaquic Xerofluvents silt loam, frequently flooded	C							
		January	2.0-6.7	---	0.0-0.6	Brief	Rare	
		February	2.0-6.7	---	0.0-0.6	Brief	Rare	
		March	2.0-6.7	---	0.0-0.6	Brief	Rare	
		April	2.0-6.7	---	0.0-0.6	Brief	Rare	
		December	2.0-6.7	---	0.0-0.6	Brief	Rare	
441:								
Oxyaquic Xerofluvents very fine sandy loam	C							
		January	2.0-6.7	---	0.0-0.6	Brief	Rare	
		February	2.0-6.7	---	0.0-0.6	Brief	Rare	
		March	2.0-6.7	---	0.0-0.6	Brief	Rare	
		April	2.0-6.7	---	0.0-0.6	Brief	Rare	
		December	2.0-6.7	---	0.0-0.6	Brief	Rare	
442:								
Durixerolls clay loam	C							
		January	1.0-3.3	1.7-3.3	0.0-0.1	Very brief	Occasional	
		February	1.0-3.3	1.7-3.3	0.0-0.1	Very brief	Occasional	
		March	1.0-3.3	1.7-3.3	0.0-0.1	Very brief	Occasional	
		April	1.0-3.3	1.7-3.3	---	---	None	
		December	1.0-3.3	1.7-3.3	0.0-0.1	Very brief	Occasional	
Haploxerolls clay loam	C							
		January	1.7-5.0	3.3-5.0	---	---	None	
		February	1.7-5.0	3.3-5.0	---	---	None	
		March	1.7-5.0	3.3-5.0	---	---	None	
		April	1.7-5.0	3.3-5.0	---	---	None	
		December	1.7-5.0	3.3-5.0	---	---	None	
443:								
Durixerolls loam	C							
		January	1.0-3.3	1.7-3.3	---	---	None	
		February	1.0-3.3	1.7-3.3	---	---	None	
		March	1.0-3.3	1.7-3.3	---	---	None	
		April	1.0-3.3	1.7-3.3	---	---	None	
		December	1.0-3.3	1.7-3.3	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
443:								
Haploxerolls loam	C							
		January	1.7-5.0	3.3-5.0	---	---	None	
		February	1.7-5.0	3.3-5.0	---	---	None	
		March	1.7-5.0	3.3-5.0	---	---	None	
		April	1.7-5.0	3.3-5.0	---	---	None	
		December	1.7-5.0	3.3-5.0	---	---	None	
445:								
Chico loam	B							
		January	6.0-6.7	---	---	---	None	
		February	6.0-6.7	---	---	---	None	
		March	6.0-6.7	---	---	---	None	
		December	6.0-6.7	---	---	---	None	
447:								
Charger fine sandy loam	B							
		January	3.3-6.7	---	---	---	None	
		February	3.3-6.7	---	---	---	None	
		March	3.3-6.7	---	---	---	None	
		April	3.3-6.7	---	---	---	None	
		December	3.3-6.7	---	---	---	None	
448:								
Haploxerolls clay loam	C							
		January	3.3-6.7	5.0-6.7	---	---	None	
		February	3.3-6.7	5.0-6.7	---	---	None	
		March	3.3-6.7	5.0-6.7	---	---	None	
		April	3.3-6.7	5.0-6.7	---	---	None	
		December	3.3-6.7	5.0-6.7	---	---	None	
449:								
Haploxerolls loam	C							
		January	3.3-6.7	5.0-6.7	---	---	None	
		February	3.3-6.7	5.0-6.7	---	---	None	
		March	3.3-6.7	5.0-6.7	---	---	None	
		April	3.3-6.7	5.0-6.7	---	---	None	
		December	3.3-6.7	5.0-6.7	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
500:								
Lofgren clay	D							
		January	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Ve
		February	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Ve
		March	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Ve
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	
		May	0.0-5.0	3.3-5.0	---	---	None	
		December	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	Ve
Blavo clay	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	Ve
		February	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	Ve
		March	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	Ve
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	
		May	0.0-3.3	1.7-3.3	---	---	None	
		December	1.0-3.0	1.7-3.3	0.0-0.5	Very long	Frequent	Ve
501:								
Lofgren clay, occasionally flooded	D							
		January	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	
		February	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	
		March	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	
		May	0.0-5.0	3.3-5.0	---	---	None	
		December	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	
Blavo clay, occasionally flooded	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	
		May	0.0-3.3	1.7-3.3	---	---	None	
		December	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	
502:								
Blavo silt loam, overwash, occasionally flooded	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.5	Very long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	
		May	0.0-3.3	1.7-3.3	---	---	None	
		December	1.0-3.0	1.7-3.3	0.0-0.5	Very long	Frequent	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
519:								
Edjobe silty clay	D							
		January	0.8-6.7	5.0-6.7	0.0-0.5	Long	Frequent	
		February	0.8-6.7	5.0-6.7	0.0-0.5	Long	Frequent	
		March	0.8-6.7	5.0-6.7	0.0-0.5	Long	Frequent	
		April	0.8-6.7	5.0-6.7	---	---	None	
		May	0.8-6.7	5.0-6.7	---	---	None	
		December	0.8-6.7	5.0-6.7	0.0-0.5	Long	Frequent	
520:								
Esquon clay	D							
		January	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Ve
		February	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Ve
		March	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Ve
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	Ve
		May	0.0-5.0	3.3-5.0	---	---	None	
		December	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	Ve
Neerdobe clay	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Ve
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Ve
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Ve
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	
		May	0.0-3.3	1.7-3.3	---	---	None	
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Ve
521:								
Neerdobe silt loam, overwash	D							
		January	0.0-5.0	1.7-5.0	0.0-0.5	Long	Frequent	Ve
		February	0.0-5.0	1.7-5.0	0.0-0.5	Long	Frequent	Ve
		March	0.0-5.0	1.7-5.0	0.0-0.5	Long	Frequent	Ve
		April	0.0-5.0	1.7-5.0	0.0-0.1	Brief	Occasional	
		May	0.0-5.0	1.7-5.0	---	---	None	
		December	0.0-5.0	1.7-5.0	0.0-0.5	Long	Frequent	Ve

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
522:								
Clear Lake silty clay loam, overwash-----	D							
		January	0.0-6.7	---	0.0-0.5	Very long	Frequent	
		February	0.0-6.7	---	0.0-0.5	Very long	Frequent	
		March	0.0-6.7	---	0.0-0.5	Very long	Frequent	
		April	0.0-6.7	---	0.0-0.2	Long	Occasional	
		May	0.0-6.7	---	---	---	None	
		June	3.3-6.7	---	---	---	None	
		July	3.3-6.7	---	---	---	None	
		August	3.3-6.7	---	---	---	None	
		September	3.3-6.7	---	---	---	None	
		October	3.3-6.7	---	---	---	None	
		November	3.3-6.7	---	0.0-0.2	Long	Occasional	
		December	0.0-6.7	---	0.0-0.5	Very long	Frequent	
523:								
Esquon silty clay loam, overwash---------	D							
		January	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	
		February	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	
		March	0.0-5.0	3.3-5.0	0.0-0.5	Long	Frequent	
		April	0.0-5.0	3.3-5.0	0.0-0.1	Brief	Occasional	
		May	0.0-5.0	3.3-5.0	---	---	None	
		June	0.0-5.0	3.3-5.0	---	---	None	
		July	3.0-5.0	3.3-5.0	---	---	None	
		August	3.0-5.0	3.3-5.0	---	---	None	
		September	3.0-5.0	3.3-5.0	---	---	None	
		October	3.0-5.0	3.3-5.0	---	---	None	
		November	0.0-5.0	3.3-5.0	---	---	None	
		December	0.0-5.0	3.3-5.0	0.0-0.5	Very long	Frequent	
525:								
Govstanford loam-------------------------	C							
		January	1.7-6.0	---	---	---	None	
		February	1.7-6.0	---	---	---	None	
		March	1.7-6.0	---	---	---	None	
		April	1.7-6.0	---	---	---	None	
		December	1.7-6.0	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
526:								
Govstanford loam, occasionally flooded---	C							
		January	1.7-6.0	---	---	---	None	
		February	1.7-6.0	---	---	---	None	
		March	1.7-6.0	---	---	---	None	
		April	1.7-6.0	---	---	---	None	
		December	1.7-6.0	---	---	---	None	
528:								
Neerdobe clay loam----------	D							
		January	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Ve
		February	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Ve
		March	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Ve
		April	0.0-3.3	1.7-3.3	0.0-0.1	Brief	Occasional	
		May	0.0-3.3	1.7-3.3	---	---	None	
		November	---	---	---	---	None	Ve
		December	0.0-3.3	1.7-3.3	0.0-0.5	Long	Frequent	Ve
550:								
Dunstone loam, dry----------	D							
		Jan-Dec	---	---	---	---	None	
Loafercreek silt loam, dry----------	B							
		Jan-Dec	---	---	---	---	None	
551:								
Dunstone loam, dry----------	D							
		Jan-Dec	---	---	---	---	None	
Lomarica loam----------	C							
		Jan-Dec	---	---	---	---	None	
Argonaut taxadjunct loam----------	C							
		Jan-Dec	---	---	---	---	None	
552:								
Dunstone gravelly loam----------	D							
		Jan-Dec	---	---	---	---	None	
Loafercreek gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
553:								
Dunstone gravelly loam	D							
		Jan-Dec	---	---	---	---	None	
Loafercreek gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
554:								
Dunstone gravelly loam	D							
		Jan-Dec	---	---	---	---	None	
Loafercreek gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
555:								
Dunstone gravelly loam	D							
		Jan-Dec	---	---	---	---	None	
Loafercreek gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
556:								
Mounthope loam	B							
		Jan-Dec	---	---	---	---	None	
Hartsmill gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
557:								
Mounthope loam	B							
		Jan-Dec	---	---	---	---	None	
Hartsmill gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
558:								
Hartsmill gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Mounthope loam	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
559:								
Hartsmill gravelly loam	B	Jan-Dec	---	---	---	---	None	
Mounthope loam	B	Jan-Dec	---	---	---	---	None	
560:								
Hartsmill gravelly loam	B	Jan-Dec	---	---	---	---	None	
Mounthope loam	B	Jan-Dec	---	---	---	---	None	
561:								
Bigridge loam	B	Jan-Dec	---	---	---	---	None	
Minniecreek loam	B	Jan-Dec	---	---	---	---	None	
562:								
Bigridge loam	B	Jan-Dec	---	---	---	---	None	
Minniecreek loam	B	Jan-Dec	---	---	---	---	None	
563:								
Bigridge loam	B	Jan-Dec	---	---	---	---	None	
Minniecreek loam	B	Jan-Dec	---	---	---	---	None	
564:								
Bigridge loam	B	Jan-Dec	---	---	---	---	None	
Minniecreek loam	B	Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
565:								
Dunstone loam, dry	D							
		Jan-Dec	---	---	---	---	None	
Argonaut taxadjunct loam	C							
		Jan-Dec	---	---	---	---	None	
Sunnyslope loam	D							
		Jan-Dec	---	---	---	---	None	
566:								
Dunstone loam, dry	D							
		Jan-Dec	---	---	---	---	None	
Loafercreek silt loam, dry	B							
		Jan-Dec	---	---	---	---	None	
Katskillhill loam	B							
		Jan-Dec	---	---	---	---	None	
567:								
Dunstone loam, dry	D							
		Jan-Dec	---	---	---	---	None	
Loafercreek silt loam, dry	B							
		Jan-Dec	---	---	---	---	None	
Argonaut taxadjunct loam	C							
		Jan-Dec	---	---	---	---	None	
577:								
Parkshill coarse sandy loam	B							
		Jan-Dec	---	---	---	---	None	
Flanly loam	B							
		Jan-Dec	---	---	---	---	None	
Hurleton gravelly sandy loam	B							
		Jan-Dec	---	---	---	---	None	
578:								
Flanly loam	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
578:								
Swedesflat cobbly fine sandy loam--------	D							
		Jan-Dec	---	---	---	---	None	
580:								
Surnuf taxadjunct loam--------------------	B							
		Jan-Dec	---	---	---	---	None	
Griffgulch very gravelly silt loam-------	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, metavolcanic.								
581:								
Surnuf taxadjunct loam--------------------	B							
		Jan-Dec	---	---	---	---	None	
Griffgulch very gravelly silt loam-------	B							
		Jan-Dec	---	---	---	---	None	
582:								
Surnuf taxadjunct loam--------------------	B							
		Jan-Dec	---	---	---	---	None	
Griffgulch very gravelly silt loam-------	B							
		Jan-Dec	---	---	---	---	None	
583:								
Surnuf taxadjunct loam--------------------	B							
		Jan-Dec	---	---	---	---	None	
Griffgulch very gravelly silt loam-------	B							
		Jan-Dec	---	---	---	---	None	
584:								
Flanly loam------------------------------	B							
		Jan-Dec	---	---	---	---	None	
Swedesflat cobbly fine sandy loam--------	D							
		Jan-Dec	---	---	---	---	None	
Rackerby very gravelly sandy loam--------	D							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
585:								
Flanly loam	B							
		Jan-Dec	---	---	---	---	None	
Sommeyflat loam	B							
		Jan-Dec	---	---	---	---	None	
586:								
Sommeyflat loam	B							
		Jan-Dec	---	---	---	---	None	
Mounthope loam	B							
		Jan-Dec	---	---	---	---	None	
587:								
Sommeyflat loam	B							
		Jan-Dec	---	---	---	---	None	
Mounthope loam	B							
		Jan-Dec	---	---	---	---	None	
Hurleton gravelly sandy loam	B							
		Jan-Dec	---	---	---	---	None	
588:								
Ultic Haploxeralfs, thermic, high terrace	C							
		January	0.8-5.0	1.7-5.0	---	---	None	
		February	0.8-5.0	1.7-5.0	---	---	None	
		March	0.8-5.0	1.7-5.0	---	---	None	
		December	0.8-5.0	1.7-5.0	---	---	None	
589:								
Ultic Haploxeralfs, thermic, high terrace	C							
		January	0.8-5.0	1.7-5.0	---	---	None	
		February	0.8-5.0	1.7-5.0	---	---	None	
		March	0.8-5.0	1.7-5.0	---	---	None	
		December	0.8-5.0	1.7-5.0	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
590:								
Vistarobles sandy loam	D							
		January	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
		February	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
		March	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
Redding loam	C							
		January	1.3-3.3	1.7-3.3	---	---	None	
		February	1.3-3.3	1.7-3.3	---	---	None	
		March	1.3-3.3	1.7-3.3	---	---	None	
		April	1.3-3.3	1.7-3.3	---	---	None	
		December	1.3-3.3	1.7-3.3	---	---	None	
Argonaut taxadjunct loam	C							
		Jan-Dec	---	---	---	---	None	
Haploxererts gravelly silty clay	D							
		January	0.0-5.0	3.3-5.0	0.0-0.3	Long	Frequent	
		February	0.0-5.0	3.3-5.0	0.0-0.3	Long	Frequent	
		March	0.0-5.0	3.3-5.0	0.0-0.3	Long	Frequent	
		April	0.0-5.0	3.3-5.0	0.0-0.3	Long	Frequent	
		November	0.0-5.0	3.3-5.0	0.0-0.3	Long	Frequent	
		December	0.0-5.0	3.3-5.0	0.0-0.3	Long	Frequent	
603:								
Oroville gravelly fine sandy loam	C							
		January	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.1	Long	Occasional	
		December	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	
Thermalito sandy loam	C							
		January	1.2-3.3	1.7-3.3	---	---	None	
		February	1.2-3.3	1.7-3.3	---	---	None	
		March	1.2-3.3	1.7-3.3	---	---	None	
		April	1.2-3.3	1.7-3.3	---	---	None	
		December	1.2-3.3	1.7-3.3	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
603:								
Fernandez sandy loam----------	C							
		January	3.3-6.7	5.0-6.7	---	---	None	
		February	3.3-6.7	5.0-6.7	---	---	None	
		March	3.3-6.7	5.0-6.7	---	---	None	
		April	3.3-6.7	5.0-6.7	---	---	None	
		December	3.3-6.7	5.0-6.7	---	---	None	
Thompsonflat fine sandy loam----------	C							
		January	3.3-6.7	---	---	---	None	
		February	3.3-6.7	---	---	---	None	
		March	3.3-6.7	---	---	---	None	
		April	3.3-6.7	---	---	---	None	
		December	3.3-6.7	---	---	---	None	
605:								
Duric Xerarents fine sandy loam, leveled	D							
		January	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	
		February	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	
		March	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	
		April	0.0-3.3	0.0-3.3	0.0-0.5	Long	Occasional	
		December	0.0-3.3	0.0-3.3	0.2-0.5	Very long	Frequent	
Oroville gravelly fine sandy loam--------	C							
		January	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	
		February	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	
		March	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	
		April	0.0-3.3	1.7-3.3	0.0-0.1	Long	Frequent	
		December	0.0-3.3	1.7-3.3	0.0-0.3	Very long	Frequent	
606:								
Redtough loam----------	D							
		January	0.2-1.7	0.8-1.7	---	---	None	
		February	0.2-1.7	0.8-1.7	---	---	None	
		March	0.2-1.7	0.8-1.7	---	---	None	
		November	0.2-1.7	0.8-1.7	---	---	None	
		December	0.2-1.7	0.8-1.7	---	---	None	
Fallager loam----------	D							
		January	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
		February	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
		March	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
		November	0.0-0.8	0.3-0.8	0.0-0.1	Very brief	Occasional	
		December	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
606:								
Anita, gravelly duripan	D							
		January	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		February	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		March	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		May	0.0-1.7	0.8-1.7	0.0-0.2	Very brief	Rare	
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
609:								
Anita, gravelly duripan	D							
		January	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		February	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		March	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		May	0.0-1.7	0.8-1.7	0.0-0.2	Very brief	Rare	
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
Tuscan taxadjunct gravelly clay loam	C							
		January	0.2-3.3	1.7-3.3	---	---	None	
		February	0.2-3.3	1.7-3.3	---	---	None	
		March	0.2-3.3	1.7-3.3	---	---	None	
		April	0.2-3.3	1.7-3.3	---	---	None	
		December	0.2-3.3	1.7-3.3	---	---	None	
614:								
Doemill gravelly loam	D							
		January	0.2-1.7	0.8-1.7	---	---	None	
		February	0.2-1.7	0.8-1.7	---	---	None	
		March	0.2-1.7	0.8-1.7	---	---	None	
		November	0.8-1.7	0.8-1.7	---	---	None	
		December	0.8-1.7	0.8-1.7	---	---	None	
Jokerst very cobbly loam	D							
		January	0.0-0.8	0.2-0.8	0.0-0.1	Brief	Frequent	Ve
		February	0.0-0.8	0.2-0.8	0.0-0.1	Brief	Frequent	Ve
		March	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	Ve
		November	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Occasional	
		December	0.0-0.8	0.2-0.8	0.0-0.1	Brief	Frequent	Ve

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
615:								
Doemill gravelly loam----------	D							
		January	0.2-1.7	0.8-1.7	---	---	None	
		February	0.2-1.7	0.8-1.7	---	---	None	
		March	0.2-1.7	0.8-1.7	---	---	None	
		November	0.8-1.7	0.8-1.7	---	---	None	
		December	0.8-1.7	0.8-1.7	---	---	None	
Jokerst very cobbly loam----------	D							
		January	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	V
		February	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	V
		March	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	V
		November	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Occasional	
		December	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	V
616:								
Jokerst very cobbly loam----------	D							
		January	0.0-0.8	0.2-0.8	---	---	None	
		February	0.0-0.8	0.2-0.8	---	---	None	
		March	0.0-0.8	0.2-0.8	---	---	None	
		November	0.0-0.8	0.2-0.8	---	---	None	
		December	0.0-0.8	0.2-0.8	---	---	None	
Doemill gravelly loam----------	D							
		January	0.3-1.7	0.8-1.7	---	---	None	
		February	0.3-1.7	0.8-1.7	---	---	None	
		March	0.3-1.7	0.8-1.7	---	---	None	
		November	0.3-1.7	0.8-1.7	---	---	None	
		December	0.3-1.7	0.8-1.7	---	---	None	
Typic Haploxeralfs gravelly loam---------	B							
		Jan-Dec	---	---	---	---	None	
617:								
Doemill gravelly loam----------	D							
		January	0.5-1.7	0.8-1.7	---	---	None	
		February	0.5-1.7	0.8-1.7	---	---	None	
Jokerst very cobbly loam----------	D							
		January	0.0-0.8	0.2-0.8	---	---	None	
		February	0.0-0.8	0.2-0.8	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
617:								
Typic Haploxeralfs gravelly loam---------	B							
		Jan-Dec	---	---	---	---	None	
619:								
Carhart taxadjunct clay------------------	D							
		January	0.0-3.3	0.8-3.3	0.0-0.5	Long	Frequent	
		February	0.0-3.3	0.8-3.3	0.0-0.5	Long	Frequent	
		March	0.0-3.3	0.8-3.3	0.0-0.5	Long	Frequent	
		April	0.0-3.3	0.8-3.3	0.0-0.2	Brief	Rare	
		May	0.0-3.3	0.8-3.3	0.0-0.2	Very brief	Rare	
		November	0.0-3.3	0.8-3.3	0.0-0.2	Brief	Rare	
		December	0.0-3.3	0.8-3.3	0.0-0.3	Long	Frequent	
620:								
Doemill gravelly loam--------------------	D							
		January	0.2-1.7	0.8-1.7	---	---	None	
		February	0.2-1.7	0.8-1.7	---	---	None	
		March	0.2-1.7	0.8-1.7	---	---	None	
		November	0.8-1.7	0.8-1.7	---	---	None	
		December	0.8-1.7	0.8-1.7	---	---	None	
Jokerst very cobbly loam-----------------	D							
		January	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	
		February	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	
		March	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	
		November	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Occasional	
		December	0.0-0.8	0.2-0.8	0.0-0.1	Very brief	Frequent	
Ultic Haploxeralfs, thermic, gravelly loam-----------------------------------	C							
		January	1.5-3.3	1.7-3.3	---	---	None	
		February	1.5-3.3	1.7-3.3	---	---	None	
		March	1.5-3.3	1.7-3.3	---	---	None	
		December	1.5-3.3	1.7-3.3	---	---	None	
621:								
Doemill gravelly loam--------------------	D							
		January	0.3-1.7	0.8-1.7	---	---	None	
		February	0.3-1.7	0.8-1.7	---	---	None	
		March	0.3-1.7	0.8-1.7	---	---	None	
		November	0.3-1.7	0.8-1.7	---	---	None	
		December	0.3-1.7	0.8-1.7	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
621:								
Jokerst very cobbly loam----------	D							
		January	0.0-0.8	0.2-0.8	---	---	None	
		February	0.0-0.8	0.2-0.8	---	---	None	
		March	0.0-0.8	0.2-0.8	---	---	None	
		November	0.0-0.8	0.2-0.8	---	---	None	
		December	0.0-0.8	0.2-0.8	---	---	None	
Ultic Haploxeralfs, thermic, gravelly loam----------	C							
		January	1.6-3.3	1.7-3.3	---	---	None	
		February	1.6-3.3	1.7-3.3	---	---	None	
		March	1.6-3.3	1.7-3.3	---	---	None	
		December	1.6-3.3	1.7-3.3	---	---	None	
622:								
Xerorthents, shallow----------	D							
		Jan-Dec	---	---	---	---	None	
Typic Haploxeralfs gravelly loam---------	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, mudflow-breccia cliffs.								
623:								
Xerorthents, shallow----------	D							
		Jan-Dec	---	---	---	---	None	
Typic Haploxeralfs gravelly loam---------	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, mudflow-breccia cliffs.								
624:								
Ultic Haploxeralfs, mesic, gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Rockstripe very gravelly loam----------	D							
		Jan-Dec	---	---	---	---	None	
625:								
Ultic Haploxeralfs, mesic, gravelly loam	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
625:								
Rockstripe very gravelly loam----------	D							
		Jan-Dec	---	---	---	---	None	
626:								
Ultic Haploxeralfs gravelly loam---------	B							
		Jan-Dec	---	---	---	---	None	
Rockstripe very gravelly loam----------	D							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, mudflow-breccia cliffs.								
627:								
Ultic Haploxeralfs gravelly loam---------	B							
		Jan-Dec	---	---	---	---	None	
Rockstripe very gravelly loam----------	D							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, mudflow-breccia cliffs.								
628:								
Rockstripe very gravelly loam----------	D							
		Jan-Dec	---	---	---	---	None	
Ultic Haploxeralfs gravelly loam---------	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, mudflow-breccia cliffs.								
629:								
Slideland gravelly loam-----------------	B							
		Jan-Dec	---	---	---	---	None	
630:								
Slideland gravelly loam-----------------	B							
		Jan-Dec	---	---	---	---	None	
631:								
Slideland gravelly loam-----------------	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
632:								
Ultic Haploxeralfs, conglomerate, very deep	B	Jan-Dec	---	---	---	---	None	
Ultic Haploxeralfs, conglomerate, moderately deep	B	Jan-Dec	---	---	---	---	None	
633:								
Ultic Haploxeralfs, conglomerate, very deep	B	Jan-Dec	---	---	---	---	None	
Ultic Haploxeralfs, conglomerate, moderately deep	B	Jan-Dec	---	---	---	---	None	
634:								
Ultic Haploxeralfs, conglomerate, very deep	B	Jan-Dec	---	---	---	---	None	
Ultic Haploxeralfs, conglomerate, moderately deep	B	Jan-Dec	---	---	---	---	None	
635:								
Ultic Haploxeralfs, conglomerate, very deep	B	Jan-Dec	---	---	---	---	None	
Ultic Haploxeralfs, conglomerate, moderately deep	B	Jan-Dec	---	---	---	---	None	
636:								
Ultic Haploxeralfs, conglomerate, moderately deep	B	Jan-Dec	---	---	---	---	None	
Ultic Haploxeralfs, conglomerate, very deep	B	Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
637:								
Ultic Haploxeralfs, sandstone----------	B							
		Jan-Dec	---	---	---	---	None	
638:								
Ultic Haploxeralfs, sandstone----------	B							
		Jan-Dec	---	---	---	---	None	
639:								
Ultic Haploxeralfs, sandstone----------	B							
		Jan-Dec	---	---	---	---	None	
640:								
Ultic Haploxeralfs, sandstone----------	B							
		Jan-Dec	---	---	---	---	None	
641:								
Ultic Haploxeralfs, sandstone----------	B							
		Jan-Dec	---	---	---	---	None	
642:								
Chinacamp gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
643:								
Chinacamp gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
644:								
Chinacamp gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
645:								
Chinacamp gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
646:								
Coalcanyon taxadjunct very gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
647:								
Coalcanyon taxadjunct very gravelly loam	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
648:								
Coalcanyon taxadjunct very gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
649:								
Coalcanyon taxadjunct very gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
650:								
Schott very gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
651:								
Schott very gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
652:								
Schott very gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, mudflow breccia.								
654:								
Coridge bouldery loam----------	C							
		January	0.8-3.3	1.7-3.3	---	---	None	
		February	0.8-3.3	1.7-3.3	---	---	None	
		March	0.8-3.3	1.7-3.3	---	---	None	
		April	0.8-3.3	1.7-3.3	---	---	None	
		December	0.8-3.3	1.7-3.3	---	---	None	
Rock outcrop, Cohasset basalt.								
655:								
Coridge bouldery loam----------	C							
		January	0.8-3.3	1.7-3.3	---	---	None	
		February	0.8-3.3	1.7-3.3	---	---	None	
		March	0.8-3.3	1.7-3.3	---	---	None	
		December	0.8-3.3	1.7-3.3	---	---	None	
Rock outcrop, Cohasset basalt.								
656:								
Rock outcrop, basalt cliffs.								

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
656:								
Coalcanyon taxadjunct very gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
657:								
Bonneyridge sandy loam----------	A							
		Jan-Dec	---	---	---	---	None	
Chawanakee gravelly sandy loam----------	C							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, quartz diorite.								
658:								
Bonneyridge sandy loam----------	A							
		Jan-Dec	---	---	---	---	None	
Chawanakee gravelly sandy loam----------	C							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, quartz diorite.								
659:								
Bonneyridge sandy loam----------	A							
		Jan-Dec	---	---	---	---	None	
Chawanakee gravelly sandy loam----------	C							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, quartz diorite.								
660:								
Bonneyridge sandy loam----------	A							
		Jan-Dec	---	---	---	---	None	
Chawanakee gravelly sandy loam----------	C							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, quartz diorite.								
661:								
Millerridge gravelly sandy clay loam-----	C							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
661:								
Boxrobber cobbly sandy clay loam---------	D							
		Jan-Dec	---	---	---	---	None	
662:								
Millerridge gravelly sandy clay loam-----	C							
		Jan-Dec	---	---	---	---	None	
Boxrobber cobbly sandy clay loam---------	D							
		Jan-Dec	---	---	---	---	None	
663:								
Millerridge gravelly sandy clay loam-----	C							
		Jan-Dec	---	---	---	---	None	
Boxrobber cobbly sandy clay loam---------	D							
		Jan-Dec	---	---	---	---	None	
664:								
Millerridge gravelly sandy clay loam-----	C							
		Jan-Dec	---	---	---	---	None	
Boxrobber cobbly sandy clay loam---------	D							
		Jan-Dec	---	---	---	---	None	
665:								
Surnuf gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Bigridge loam----------	B							
		Jan-Dec	---	---	---	---	None	
666:								
Surnuf gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Bigridge loam----------	B							
		Jan-Dec	---	---	---	---	None	
667:								
Surnuf gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
667:								
Bigridge loam	B	Jan-Dec	---	---	---	---	None	
668:								
Surnuf gravelly loam	B	Jan-Dec	---	---	---	---	None	
Bigridge loam	B	Jan-Dec	---	---	---	---	None	
669:								
Oroshore gravelly loam	B	Jan-Dec	---	---	---	---	None	
Mounthope loam	B	Jan-Dec	---	---	---	---	None	
Dunstone gravelly loam	D	Jan-Dec	---	---	---	---	None	
670:								
Oroshore gravelly loam	B	Jan-Dec	---	---	---	---	None	
Mounthope loam	B	Jan-Dec	---	---	---	---	None	
Dunstone gravelly loam	D	Jan-Dec	---	---	---	---	None	
671:								
Oroshore gravelly loam	B	Jan-Dec	---	---	---	---	None	
Mounthope loam	B	Jan-Dec	---	---	---	---	None	
Dunstone gravelly loam	D	Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
672:								
Oroshore gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Mounthope loam	B							
		Jan-Dec	---	---	---	---	None	
Dunstone gravelly loam	D							
		Jan-Dec	---	---	---	---	None	
674:								
Chawanakee gravelly sandy loam	C							
		Jan-Dec	---	---	---	---	None	
Bonneyridge sandy loam	A							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, quartz diorite.								
675:								
Clearhayes sandy clay loam	B							
		January	1.1-5.0	3.3-5.0	---	---	None	V
		February	1.1-5.0	3.3-5.0	---	---	None	V
		March	1.1-5.0	3.3-5.0	---	---	None	V
		April	1.1-5.0	3.3-5.0	---	---	None	
		December	1.1-5.0	3.3-5.0	---	---	None	V
Hamslough clay	D							
		January	0.0-6.7	---	0.0-0.3	Brief	Frequent	
		February	0.0-6.7	---	0.0-0.3	Brief	Frequent	
		March	0.0-6.7	---	0.0-0.3	Brief	Frequent	
		April	0.0-6.7	---	0.0-0.2	Brief	Rare	
		November	---	---	0.0-0.2	Brief	Rare	
		December	0.0-6.7	---	0.0-0.3	Brief	Frequent	
676:								
Carhart clay	D							
		January	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		February	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		March	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Occasional	
		April	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Rare	
		May	0.0-3.3	1.7-3.3	---	---	None	
		December	0.0-3.3	1.7-3.3	0.0-0.2	Brief	Rare	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
676:								
Anita taxadjunct clay----------	D							
		January	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		February	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		March	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		May	0.0-1.7	0.8-1.7	0.0-0.2	Very brief	Rare	
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
677:								
Tuscan gravelly loam----------	D							
		January	0.2-1.7	0.8-1.7	---	---	None	
		February	0.2-1.7	0.8-1.7	---	---	None	
		March	0.2-1.7	0.8-1.7	---	---	None	
		November	0.2-1.7	0.8-1.7	---	---	None	
		December	0.2-1.7	0.8-1.7	---	---	None	
Fallager loam----------	D							
		January	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
		February	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
		March	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
		November	0.0-0.8	0.3-0.8	0.0-0.1	Very brief	Occasional	
		December	0.0-0.8	0.3-0.8	0.0-0.1	Brief	Frequent	
Anita, gravelly duripan----------	D							
		January	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		February	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		March	0.0-1.7	0.8-1.7	0.0-0.5	Long	Frequent	
		April	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		May	0.0-1.7	0.8-1.7	0.0-0.2	Very brief	Rare	
		November	0.0-1.7	0.8-1.7	0.0-0.2	Brief	Occasional	
		December	0.0-1.7	0.8-1.7	0.0-0.3	Long	Frequent	
679:								
Lucksev loam----------	D							
		January	0.2-1.7	0.3-1.7	---	---	None	
		February	0.2-1.7	0.3-1.7	---	---	None	
		March	0.2-1.7	0.3-1.7	---	---	None	
		December	0.2-1.7	0.3-1.7	---	---	None	
Butteside gravelly loam----------	C							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
679:								
Carhart clay	D							
		January	0.0-3.3	1.7-3.3	---	---	None	
		February	0.0-3.3	1.7-3.3	---	---	None	
		March	0.0-3.3	1.7-3.3	---	---	None	
		April	0.0-3.3	1.7-3.3	---	---	None	
		May	0.0-3.3	1.7-3.3	---	---	None	
		December	0.0-3.3	1.7-3.3	---	---	None	
680:								
Lucksev loam	D							
		Jan-Dec	---	---	---	---	None	
Butteside gravelly loam	C							
		Jan-Dec	---	---	---	---	None	
683:								
Typic Haploxeralfs, magnesic, low elevation	C							
		Jan-Dec	---	---	---	---	None	
Earlal very gravelly loam	D							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, serpentinite.								
684:								
Typic Haploxeralfs, magnesic, low elevation	C							
		Jan-Dec	---	---	---	---	None	
Earlal very gravelly loam	D							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, serpentinite.								
685:								
Bosquejo taxadjunct, gravelly substratum	D							
		January	1.0-5.0	---	0.0-0.2	Brief	Occasional	V
		February	1.0-5.0	---	0.0-0.2	Brief	Occasional	V
		March	1.0-5.0	---	0.0-0.2	Brief	Occasional	V
		April	1.0-5.0	---	0.0-0.2	Very brief	Rare	
		December	1.0-5.0	---	0.0-0.2	Very brief	Rare	V

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
686:								
Redsluff taxadjunct clay loam----------	B							
		January	3.0-5.0	5.0-7.1	---	---	None	Ve
		February	3.0-5.0	5.0-7.1	---	---	None	Ve
		March	3.0-5.0	5.0-7.1	---	---	None	Ve
		April	3.0-5.0	5.0-7.1	---	---	None	
		May	5.0-6.1	5.0-7.1	---	---	None	
		June	5.0-6.7	5.0-7.1	---	---	None	
		December	3.0-5.0	5.0-7.1	---	---	None	Ve
687:								
Xerorthents, shallow----------	D							
		Jan-Dec	---	---	---	---	None	
Typic Haploxeralfs gravelly loam---------	B							
		Jan-Dec	---	---	---	---	None	
700:								
Retsongulch very gravelly sandy loam-----	B							
		Jan-Dec	---	---	---	---	None	
Flumewall gravelly sandy loam----------	D							
		Jan-Dec	---	---	---	---	None	
701:								
Powellton gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Obstruction gravelly sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
702:								
Cerpone gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Typic Haploxeralfs, magnesic, very gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Earlal very gravelly loam----------	D							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
703:								
Cerpone gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Typic Haploxeralfs, magnesic, very gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Earlal very gravelly loam----------	D							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, serpentinite.								
704:								
Typic Haploxeralfs, magnesic, very gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Earlal very gravelly loam----------	D							
		Jan-Dec	---	---	---	---	None	
Cerpone gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, serpentinite.								
705:								
Typic Haploxeralfs, magnesic, very gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Earlal very gravelly loam----------	D							
		Jan-Dec	---	---	---	---	None	
Cerpone gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, serpentinite.								
711:								
Dixmine very gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
711:								
Toadtown loam	B							
		Jan-Dec	---	---	---	---	None	
712:								
Dixmine very gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Toadtown loam	B							
		Jan-Dec	---	---	---	---	None	
713:								
Dixmine very gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Toadtown loam	B							
		Jan-Dec	---	---	---	---	None	
714:								
Dixmine very gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Toadtown loam	B							
		Jan-Dec	---	---	---	---	None	
715:								
Logtrain gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Bottlehill very gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Walkermine very gravelly loam	D							
		Jan-Dec	---	---	---	---	None	
716:								
Griffgulch very gravelly silt loam	B							
		Jan-Dec	---	---	---	---	None	
Surnuf gravelly loam	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
717:								
Griffgulch very gravelly silt loam-------	B							
		Jan-Dec	---	---	---	---	None	
Surnuf gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
718:								
Griffgulch very gravelly silt loam-------	B							
		Jan-Dec	---	---	---	---	None	
Surnuf gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Spine taxadjunct very cobbly loam--------	D							
		Jan-Dec	---	---	---	---	None	
719:								
Griffgulch very gravelly silt loam-------	B							
		Jan-Dec	---	---	---	---	None	
Surnuf gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Spine taxadjunct very cobbly loam--------	D							
		Jan-Dec	---	---	---	---	None	
720:								
Dystroxerepts extremely gravelly loam----	B							
		Jan-Dec	---	---	---	---	None	
Haploxeralfs very gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, metavolcanic.								
721:								
Haploxerands, granitic till, medial sandy loam----------	A							
		Jan-Dec	---	---	---	---	None	
722:								
Haploxerands, granitic till, medial sandy loam----------	A							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
723:								
Haploxerands, granitic till, medial sandy loam	A							
		Jan-Dec	---	---	---	---	None	
724:								
Haploxerands, volcanic till, cobbly medial sandy loam	B							
		Jan-Dec	---	---	---	---	None	
725:								
Haploxerands, volcanic till, cobbly medial sandy loam	B							
		Jan-Dec	---	---	---	---	None	
726:								
Haploxerands, volcanic till, cobbly medial sandy loam	B							
		Jan-Dec	---	---	---	---	None	
727:								
Bonneyridge sandy loam	A							
		Jan-Dec	---	---	---	---	None	
728:								
Bonneyridge sandy loam	A							
		Jan-Dec	---	---	---	---	None	
729:								
Bonneyridge sandy loam	A							
		Jan-Dec	---	---	---	---	None	
730:								
Tusccoll gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Schott very gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
731:								
Tusccoll gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Schott very gravelly loam	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
732:								
Bonepile taxadjunct, duripan substratum--	B							
		January	3.1-6.0	---	---	---	None	
		February	3.1-6.0	---	---	---	None	
		March	3.1-6.0	---	---	---	None	
		April	3.1-6.0	---	---	---	None	
		May	3.1-6.0	---	---	---	None	
		June	3.1-6.0	---	---	---	None	
		July	4.9-8.2	---	---	---	None	
		August	6.6-12	---	---	---	None	
		September	6.6-12	---	---	---	None	
		October	6.6-12	---	---	---	None	
		November	4.9-12	---	---	---	None	
		December	3.1-6.0	---	---	---	None	
733:								
Haploxeralfs, terrace, gravelly loam-----	B							
		Jan-Dec	---	---	---	---	None	
734:								
Haploxerands medial sandy loam----------	A							
		Jan-Dec	---	---	---	---	None	
Aquic Xerofluvents peaty very fine sandy loam----------	D							
		January	0.0-1.4	---	---	---	None	
		February	0.0-1.4	---	---	---	None	
		March	0.0-1.4	---	---	---	None	
		April	0.0-2.3	---	---	---	None	
		May	0.0-2.3	---	---	---	None	
		June	0.0-3.6	---	---	---	None	
		July	1.4-6.1	---	---	---	None	
		August	3.6-6.6	---	---	---	None	
		September	4.8-8.2	---	---	---	None	
		October	4.8-8.2	---	---	---	None	
		November	1.4-6.1	---	---	---	None	
		December	0.0-3.6	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
735:								
Fluvaquents, loamy----------	C							
		January	0.8-3.3	---	---	---	None	
		February	0.8-3.3	---	---	---	None	
		March	0.8-3.3	---	---	---	None	
		April	1.3-3.9	---	---	---	None	
		May	1.6-4.3	---	---	---	None	
		June	3.6-4.9	---	---	---	None	
		July	3.9-5.2	---	---	---	None	
		August	4.3-5.2	---	---	---	None	
		September	4.6-5.6	---	---	---	None	
		October	4.6-5.6	---	---	---	None	
		November	3.9-5.2	---	---	---	None	
		December	1.3-3.9	---	---	---	None	
801:								
Obstruction gravelly sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
802:								
Obskel very gravelly sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Obstruction gravelly sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
803:								
Obskel very gravelly sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Obstruction gravelly sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
804:								
Obskel very gravelly sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Obstruction gravelly sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Retsongulch very gravelly sandy loam-----	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
805:								
Bottlehill very gravelly loam	B	Jan-Dec	---	---	---	---	None	
Walkermine very gravelly loam	D	Jan-Dec	---	---	---	---	None	
Logtrain gravelly loam	B	Jan-Dec	---	---	---	---	None	
806:								
Bottlehill very gravelly loam	B	Jan-Dec	---	---	---	---	None	
Walkermine very gravelly loam	D	Jan-Dec	---	---	---	---	None	
Logtrain gravelly loam	B	Jan-Dec	---	---	---	---	None	
807:								
Bottlehill very gravelly loam	B	Jan-Dec	---	---	---	---	None	
Logtrain gravelly loam	B	Jan-Dec	---	---	---	---	None	
Walkermine very gravelly loam	D	Jan-Dec	---	---	---	---	None	
808:								
Bottlehill very gravelly loam	B	Jan-Dec	---	---	---	---	None	
Walkermine very gravelly loam	D	Jan-Dec	---	---	---	---	None	
Logtrain gravelly loam	B	Jan-Dec	---	---	---	---	None	
809:								
Walkermine very gravelly loam	D	Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
809:								
Bottlehill very gravelly loam	B	Jan-Dec	---	---	---	---	None	
Logtrain gravelly loam	B	Jan-Dec	---	---	---	---	None	
Rock outcrop, metavolcanic.								
810:								
Dixmine very gravelly loam	B	Jan-Dec	---	---	---	---	None	
Mac gravelly loam	B	Jan-Dec	---	---	---	---	None	
Spine very gravelly loam	D	Jan-Dec	---	---	---	---	None	
811:								
Powellton gravelly loam	B	Jan-Dec	---	---	---	---	None	
Toadtown loam	B	Jan-Dec	---	---	---	---	None	
812:								
Powellton gravelly loam	B	Jan-Dec	---	---	---	---	None	
Toadtown loam	B	Jan-Dec	---	---	---	---	None	
813:								
Powellton gravelly loam	B	Jan-Dec	---	---	---	---	None	
Toadtown loam	B	Jan-Dec	---	---	---	---	None	
814:								
Mountyana gravelly loam	B	Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
815:								
Mountyana gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
817:								
Lydon very gravelly medial coarse sandy loam	B							
		Jan-Dec	---	---	---	---	None	
818:								
Lydon very gravelly medial coarse sandy loam	B							
		Jan-Dec	---	---	---	---	None	
819:								
Lydon very gravelly medial coarse sandy loam	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, mudflow breccia.								
820:								
Lydon very gravelly medial coarse sandy loam	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, mudflow breccia.								
821:								
Lydon very gravelly medial coarse sandy loam	B							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, mudflow breccia.								
822:								
Bonepile gravelly medial loam	B							
		Jan-Dec	---	---	---	---	None	
823:								
Bonepile gravelly medial loam	B							
		Jan-Dec	---	---	---	---	None	
824:								
Beecee very gravelly medial loam	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
825:								
Beecee very gravelly medial loam---------	B							
		Jan-Dec	---	---	---	---	None	
Lydon very gravelly medial coarse sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
826:								
Redbone gravelly medial sandy loam-------	B							
		Jan-Dec	---	---	---	---	None	
827:								
Redbone gravelly medial sandy loam-------	B							
		Jan-Dec	---	---	---	---	None	
829:								
Paradiso loam----------	B							
		Jan-Dec	---	---	---	---	None	
830:								
Paradiso loam----------	B							
		Jan-Dec	---	---	---	---	None	
831:								
Surnuf gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Bigridge loam----------	B							
		Jan-Dec	---	---	---	---	None	
Spine very gravelly loam----------	D							
		Jan-Dec	---	---	---	---	None	
832:								
Surnuf gravelly loam----------	B							
		Jan-Dec	---	---	---	---	None	
Bigridge loam----------	B							
		Jan-Dec	---	---	---	---	None	
Spine very gravelly loam----------	D							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
833:								
Surnuf gravelly loam	B	Jan-Dec	---	---	---	---	None	
Bigridge loam	B	Jan-Dec	---	---	---	---	None	
Spine very gravelly loam	D	Jan-Dec	---	---	---	---	None	
834:								
Hietanen gravelly loam	B	Jan-Dec	---	---	---	---	None	
Mac gravelly loam	B	Jan-Dec	---	---	---	---	None	
835:								
Hietanen gravelly loam	B	Jan-Dec	---	---	---	---	None	
Mac gravelly loam	B	Jan-Dec	---	---	---	---	None	
836:								
Hietanen gravelly loam	B	Jan-Dec	---	---	---	---	None	
Mac gravelly loam	B	Jan-Dec	---	---	---	---	None	
Spine very gravelly loam	D	Jan-Dec	---	---	---	---	None	
837:								
Hietanen gravelly loam	B	Jan-Dec	---	---	---	---	None	
Spine very gravelly loam	D	Jan-Dec	---	---	---	---	None	
Mac gravelly loam	B	Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
838:								
Dixmine very gravelly loam	B	Jan-Dec	---	---	---	---	None	
Spine very gravelly loam	D	Jan-Dec	---	---	---	---	None	
Mac gravelly loam	B	Jan-Dec	---	---	---	---	None	
839:								
Chawanakee gravelly sandy loam	C	Jan-Dec	---	---	---	---	None	
Billscabin gravelly sandy loam	A	Jan-Dec	---	---	---	---	None	
841:								
Billscabin gravelly sandy loam	A	Jan-Dec	---	---	---	---	None	
Bonneyridge sandy loam	A	Jan-Dec	---	---	---	---	None	
842:								
Billscabin gravelly sandy loam	A	Jan-Dec	---	---	---	---	None	
Bonneyridge sandy loam	A	Jan-Dec	---	---	---	---	None	
846:								
Bonneyridge sandy loam	A	Jan-Dec	---	---	---	---	None	
Lewisflat loam	B	Jan-Dec	---	---	---	---	None	
847:								
Bonneyridge sandy loam	A	Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
847:								
Lewisflat loam	B							
		Jan-Dec	---	---	---	---	None	
848:								
Bonneyridge sandy loam	A							
		Jan-Dec	---	---	---	---	None	
Lewisflat loam	B							
		Jan-Dec	---	---	---	---	None	
850:								
Lewisflat loam	B							
		Jan-Dec	---	---	---	---	None	
851:								
Lewisflat loam	B							
		Jan-Dec	---	---	---	---	None	
852:								
Lewisflat loam	B							
		Jan-Dec	---	---	---	---	None	
860:								
Toadtown gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Powellton silt loam	B							
		Jan-Dec	---	---	---	---	None	
861:								
Toadtown gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Powellton silt loam	B							
		Jan-Dec	---	---	---	---	None	
862:								
Toadtown gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Powellton silt loam	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
863:								
Toadtown gravelly loam	B	Jan-Dec	---	---	---	---	None	
Powellton silt loam	B	Jan-Dec	---	---	---	---	None	
880:								
Sites taxadjunct gravelly loam	B	Jan-Dec	---	---	---	---	None	
Jocal taxadjunct gravelly loam	B	Jan-Dec	---	---	---	---	None	
881:								
Sites taxadjunct gravelly loam	B	Jan-Dec	---	---	---	---	None	
Jocal taxadjunct gravelly loam	B	Jan-Dec	---	---	---	---	None	
882:								
Sites taxadjunct gravelly loam	B	Jan-Dec	---	---	---	---	None	
Jocal taxadjunct gravelly loam	B	Jan-Dec	---	---	---	---	None	
883:								
Sites taxadjunct gravelly loam	B	Jan-Dec	---	---	---	---	None	
Jocal taxadjunct gravelly loam	B	Jan-Dec	---	---	---	---	None	
885:								
Rogerville silt loam	B	Jan-Dec	---	---	---	---	None	
886:								
Rogerville silt loam	B	Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
892:								
Rogerville silt loam----------	B							
		Jan-Dec	---	---	---	---	None	
893:								
Rogerville silt loam----------	B							
		Jan-Dec	---	---	---	---	None	
902:								
Lava flows, Lovejoy basalt.								
Lumpkin gravelly medial sandy loam-------	D							
		Jan-Dec	---	---	---	---	None	
903:								
Mudwash gravelly medial sandy loam-------	B							
		Jan-Dec	---	---	---	---	None	
Timberisland very gravelly medial sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Lavatop gravelly medial fine sandy loam--	B							
		Jan-Dec	---	---	---	---	None	
904:								
Lava flows, Lovejoy basalt.								
Lavatop gravelly medial fine sandy loam--	B							
		Jan-Dec	---	---	---	---	None	
905:								
Lava flows, Lovejoy basalt.								
Lumpkin gravelly medial sandy loam-------	D							
		Jan-Dec	---	---	---	---	None	
906:								
Lava flows, Lovejoy basalt.								
Lumpkin gravelly medial sandy loam-------	D							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
911:								
Endoaquolls loam	D							
		January	0.0-1.4	---	---	---	None	
		February	0.0-1.4	---	---	---	None	
		March	0.0-1.4	---	---	---	None	
		April	0.0-2.3	---	---	---	None	
		May	0.0-2.3	---	---	---	None	
		June	0.0-3.6	---	---	---	None	
		July	1.4-6.1	---	---	---	None	
		August	3.6-6.6	---	---	---	None	
		September	4.8-7.2	---	---	---	None	
		October	4.8-7.2	---	---	---	None	
		November	1.4-6.1	---	---	---	None	
		December	0.0-3.6	---	---	---	None	
923:								
Powderhouse medial sandy loam	B							
		Jan-Dec	---	---	---	---	None	
McNair medial coarse sandy loam	B							
		Jan-Dec	---	---	---	---	None	
Greenwell medial sandy loam	B							
		Jan-Dec	---	---	---	---	None	
924:								
Powderhouse medial sandy loam	B							
		Jan-Dec	---	---	---	---	None	
McNair medial coarse sandy loam	B							
		Jan-Dec	---	---	---	---	None	
Greenwell medial sandy loam	B							
		Jan-Dec	---	---	---	---	None	
925:								
Powderhouse medial sandy loam	B							
		Jan-Dec	---	---	---	---	None	
McNair medial coarse sandy loam	B							
		Jan-Dec	---	---	---	---	None	
Greenwell medial sandy loam	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
930:								
Shakeridge gravelly medial coarse sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Timberisland very gravelly medial sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
931:								
Shakeridge gravelly medial coarse sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Mudwash gravelly medial sandy loam-------	B							
		Jan-Dec	---	---	---	---	None	
Timberisland very gravelly medial sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
932:								
Shakeridge gravelly medial coarse sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
Mudwash gravelly medial sandy loam-------	B							
		Jan-Dec	---	---	---	---	None	
933:								
Shakeridge gravelly medial coarse sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
934:								
Mudwash gravelly medial sandy loam-------	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
939:								
Fluvaquentic Humaquepts very fine sandy loam	D							
		January	0.0-5.0	---	---	---	None	
		February	0.0-5.0	---	---	---	None	
		March	0.0-5.0	---	---	---	None	
		April	0.0-5.0	---	---	---	None	
		May	0.0-5.0	---	---	---	None	
		June	0.0-5.0	---	---	---	None	
		July	0.0-5.0	---	---	---	None	
		August	0.0-5.0	---	---	---	None	
		November	0.0-5.0	---	---	---	None	
		December	0.0-5.0	---	---	---	None	
940:								
Dejonah gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Stagpoint loam	B							
		Jan-Dec	---	---	---	---	None	
941:								
Dejonah gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
Stagpoint loam	B							
		Jan-Dec	---	---	---	---	None	
942:								
Stagpoint loam	B							
		Jan-Dec	---	---	---	---	None	
Dejonah gravelly loam	B							
		Jan-Dec	---	---	---	---	None	
948:								
Stagpoint loam	B							
		Jan-Dec	---	---	---	---	None	
Dejonah gravelly loam	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
949:								
Rogerville taxadjunct fine sandy loam----	B							
		Jan-Dec	---	---	---	---	None	
950:								
Lumpkin taxadjunct very gravelly medial very fine sandy loam----------	D							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, olivine basalt, andesite, or mudflow.								
Powderhouse medial sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
951:								
Lumpkin taxadjunct very gravelly medial very fine sandy loam----------	D							
		Jan-Dec	---	---	---	---	None	
Rock outcrop, andesite.								
Powderhouse medial sandy loam----------	B							
		Jan-Dec	---	---	---	---	None	
960:								
Surnuf gravelly loam, high elevation-----	B							
		Jan-Dec	---	---	---	---	None	
961:								
Surnuf gravelly loam, high elevation-----	B							
		Jan-Dec	---	---	---	---	None	
962:								
Surnuf gravelly loam, high elevation-----	B							
		Jan-Dec	---	---	---	---	None	
963:								
Surnuf gravelly loam, high elevation-----	B							
		Jan-Dec	---	---	---	---	None	

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			D
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
			Ft	Ft	Ft			
990:								
Riverwash, frequently flooded	D							
		January	0.0-2.0	>6.0	---	---	None	Ve
		February	0.0-2.0	>6.0	---	---	None	Ve
		March	0.0-2.0	>6.0	---	---	None	Ve
		April	0.0-2.0	>6.0	---	---	None	Ve
		May	0.0-2.0	>6.0	---	---	None	Ve
		June	0.0-2.0	>6.0	---	---	None	Ve
		July	0.0-2.0	>6.0	---	---	None	Ve
		August	0.0-2.0	>6.0	---	---	None	
		September	0.0-2.0	>6.0	---	---	None	
		October	0.0-2.0	>6.0	---	---	None	Ve
		November	0.0-2.0	>6.0	---	---	None	Ve
		December	0.0-2.0	>6.0	---	---	None	Ve
991:								
Xerofluvents sandy loam, frequently flooded	A							
		January	2.3-6.7	---	---	---	None	
		February	2.3-6.7	---	---	---	None	
		March	2.3-6.7	---	---	---	None	
		April	2.3-6.7	---	---	---	None	
		May	2.3-6.7	---	---	---	None	
		June	2.3-6.7	---	---	---	None	
		July	2.3-6.7	---	---	---	None	
		August	2.3-6.7	---	---	---	None	
		September	2.3-6.7	---	---	---	None	
		October	2.3-6.7	---	---	---	None	
		November	2.3-6.7	---	---	---	None	
		December	2.3-6.7	---	---	---	None	
995.								
Pits, gravel								
996.								
Dumps, excavated material								
997.								
Pits								
998.								
Dumps, landfill								

Table 24.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	D
			Ft	Ft	Ft			
999.								
Water								
DAM.								
Dam, manmade								

Table 25.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a
data were not estimated)

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
100:						
Anita clay	Duripan	10-20	---	Indurated	None	Hig
Galt clay	Duripan	20-40	4-17	Moderately cemented	None	Hig
104:						
Bosquejo clay	---	---	---	---	None	Hig
105:						
Busacca clay loam	---	---	---	---	None	Hig
108:						
Tuscan gravelly loam	Duripan	10-20	---	Very strongly cemented	None	Hig
Igo gravelly loam	Duripan	4-10	---	Very strongly cemented	None	Hig
Anita clay	Duripan	10-20	---	Indurated	None	Hig
109:						
Bosquejo clay loam	---	---	---	---	None	Hig
110:						
Bosquejo silt loam, overwash, occasionally flooded	---	---	---	---	None	Hig
111yu:						
Auburn loam	Bedrock (lithic)	10-28	---	Indurated	None	Mod
Sobrante loam	Bedrock (lithic)	20-40	---	Indurated	None	Mod
	Bedrock (paralithic)	20-40	---	Moderately cemented		
114yu:						
Auburn gravelly loam	Bedrock (lithic)	10-28	---	Indurated	None	Mod
Sobrante gravelly loam	Bedrock (lithic)	20-40	---	Indurated	None	Mod
	Bedrock (paralithic)	20-40	---	Moderately cemented		

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
118:						
Xerorthents, tailings	---	---	---	---	None	Low
118co:						
Clear Lake clay, frequently flooded	---	---	---	---	None	Hig
119:						
Xerorthents, tailings	---	---	---	---	None	Low
Urban land.						
119yu:						
Auburn gravelly loam	Bedrock (lithic)	10-28	---	Indurated	None	Mod
Sobrante gravelly loam	Bedrock (lithic)	20-40	---	Indurated	None	Mod
	Bedrock (paralithic)	20-40	---	Moderately cemented		
Rock outcrop.						
120:						
Gridley taxadjunct clay loam	Duripan	20-40	---	Moderately cemented	None	Hig
121:						
Boga loam	Dense material	60-80	---	Noncemented	None	Mod
Loemstone loam	Dense material	40-60	---	Noncemented	None	Mod
121su:						
Columbia fine sandy loam, frequently flooded	---	---	---	---	None	Mod
125:						
Gridley taxadjunct loam	Duripan	20-40	---	Moderately cemented	None	Hig
Calcic Haploxerolls sandy loam	Dense material	40-60	---	Noncemented	None	Low
126:						
Liveoak sandy loam	---	---	---	---	None	Mod
127:						
Gridley taxadjunct loam	Duripan	20-40	---	Moderately cemented	None	Hig

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
130:						
Eastbiggs loam	Duripan	20-40	4-17	Indurated	None	Hig
133:						
Eastbiggs loam	Duripan	20-40	4-17	Indurated	None	Hig
Galt clay loam	Duripan	20-40	---	Moderately cemented	None	Hig
136:						
Duric Xerarents, cut	Duripan	6-21	---	Indurated	None	Hig
Duric Xerarents, fill	Duripan	24-80	4-17	Indurated	None	Hig
Eastbiggs fine sandy loam, leveled	Duripan	20-40	4-17	Indurated	None	Hig
138su:						
Liveoak sandy clay loam	---	---	---	---	None	Mod
139su:						
Liveoak taxadjunct loam, frequently flooded	Duripan	40-60	4-17	Indurated	None	Hig
Galt taxadjunct clay loam, frequently flooded	Duripan	20-35	---	Strongly cemented	None	Hig
	Dense material	26-60	---	Noncemented		
143su:						
Marcum clay loam	Bedrock (paralithic)	40-80	---	Moderately cemented	None	Hig
Gridley clay loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Hig
149yu:						
Flanly sandy loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Mod
150:						
Columbia stratified sand to fine sandy loam	---	---	---	---	None	Hig
150su:						
Olashes sandy loam	---	---	---	---	None	Mod

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	
	Kind	Depth to top	Thickness	Hardness		
		In	In			
151yu:						
Flanly sandy loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Mo
152:						
Gianella fine sandy loam, frequently flooded	---	---	---	---	None	Lo
153:						
Gianella sandy loam, frequently flooded	---	---	---	---	None	Lo
154:						
Gianella silt loam, frequently flooded	---	---	---	---	None	Lo
158:						
Gianella fine sandy loam, occasionally flooded	---	---	---	---	None	Lo
160:						
Gianella loam, occasionally flooded	---	---	---	---	None	Lo
161:						
Gianella fine sandy loam, rarely flooded	---	---	---	---	None	Lo
162:						
Gianella loam, rarely flooded	---	---	---	---	None	Lo
163yu:						
Holillipah loamy sand	---	---	---	---	None	Mo
165yu:						
Holland loam	---	---	---	---	None	Mo
Hoda loam	---	---	---	---	None	Hi
Hotaw loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Mo
173yu:						
Hotaw loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Mo

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
173yu:						
Chawanakee gravelly sandy loam--------	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Mod
Holland loam--------------------------	---	---	---	---	None	Mod
175:						
Farwell clay loam, rarely flooded-----	---	---	---	---	None	Mod
176:						
Farwell loam, occasionally flooded----	---	---	---	---	None	Mod
176yu:						
Jocal loam----------------------------	---	---	---	---	None	Mod
177:						
Farwell silt loam, occasionally flooded----------------------------	---	---	---	---	None	Mod
178:						
Arbuckle gravelly loam----------------	---	---	---	---	None	Low
179:						
Moda taxadjunct loam------------------	Duripan	20-40	---	Indurated	None	Hig
Arbuckle gravelly loam----------------	---	---	---	---	None	Low
180:						
Dodgeland silty clay loam, occasionally flooded-----------------	Duripan	80-140	---	Moderately cemented	None	Hig
181:						
Dodgeland silty clay loam, frequently flooded-----------------------------	Duripan	80-140	---	Moderately cemented	None	Hig
188yu:						
Mariposa taxadjunct gravelly loam-----	Bedrock (lithic)	15-35	---	Indurated	None	Hig
189:						
Esquon silt loam, overwash------------	Duripan	40-60	---	Moderately cemented	None	Hig

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	
	Kind	Depth to top	Thickness	Hardness		
		In	In			
189yu:						
Mariposa taxadjunct gravelly loam-----	Bedrock (lithic)	15-35	---	Indurated	None	Hig
196yu:						
Mildred cobbly loam----------	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Mo
200:						
Parrott silt loam, occasionally flooded----------	---	---	---	---	None	Lo
201:						
Parrott silt loam, frequently flooded	---	---	---	---	None	Lo
203:						
Kusalslough silty clay loam, occasionally flooded----------	---	---	---	---	None	Hig
205:						
Parrott silt loam, frequently flooded	---	---	---	---	None	Lo
Vermet silt loam, frequently flooded--	---	---	---	---	None	Hig
206:						
Islandbar sandy loam----------	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Mo
Chawanakee gravelly sandy loam--------	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Lo
207:						
Islandbar sandy loam----------	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Mo
Chawanakee gravelly sandy loam--------	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Lo
208:						
Islandbar sandy loam----------	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Mo
Chawanakee gravelly sandy loam--------	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Lo

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
209:						
Islandbar sandy loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Mod
Chawanakee gravelly sandy loam	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low
210:						
Featherfalls sandy loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Mod
Islandbar sandy loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Mod
211:						
Featherfalls sandy loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Mod
Islandbar sandy loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Mod
212:						
Featherfalls sandy loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Mod
Islandbar sandy loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Mod
213:						
Featherfalls sandy loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Mod
Islandbar sandy loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Mod
214:						
Crystalhill gravelly coarse sandy loam	Bedrock (densic)	60-80	---	Noncemented	None	Low
Oregongulch gravelly sandy loam	Bedrock (densic)	20-40	---	Noncemented	None	Low
Craigsaddle coarse sandy loam	Bedrock (densic)	40-60	---	Noncemented	None	Low
Rock outcrop, trondhjemite.						

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	
	Kind	Depth to top	Thickness	Hardness		
		In	In			
215:						
Crystalhill gravelly coarse sandy loam	Bedrock (densic)	60-80	---	Noncemented	None	Lo
Oregongulch gravelly sandy loam	Bedrock (densic)	20-40	---	Noncemented	None	Lo
Craigsaddle coarse sandy loam	Bedrock (densic)	40-60	---	Noncemented	None	Lo
Rock outcrop, trondhjemite.						
216:						
Crystalhill gravelly coarse sandy loam	Bedrock (densic)	60-80	---	Noncemented	None	Lo
Oregongulch gravelly sandy loam	Bedrock (densic)	20-40	---	Noncemented	None	Lo
Craigsaddle coarse sandy loam	Bedrock (densic)	40-60	---	Noncemented	None	Lo
Rock outcrop, trondhjemite.						
217:						
Crystalhill gravelly coarse sandy loam	Bedrock (densic)	60-80	---	Noncemented	None	Lo
Oregongulch gravelly sandy loam	Bedrock (densic)	20-40	---	Noncemented	None	Lo
Craigsaddle coarse sandy loam	Bedrock (densic)	40-60	---	Noncemented	None	Lo
Rock outcrop, trondhjemite.						
218:						
Rock outcrop, quartz diorite.						
Lithic Xerorthents gravelly sandy loam	Bedrock (lithic)	5-10	---	Indurated	None	Mo
Chawanakee gravelly sandy loam	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Lo
219:						
Rock outcrop, quartz diorite.						
Lithic Xerorthents gravelly sandy loam	Bedrock (lithic)	5-10	---	Indurated	None	Mo
Chawanakee gravelly sandy loam	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Lo

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
220:						
Esquon clay, frequently flooded-------	Duripan	40-60	---	Strongly cemented	None	Hig
Clear Lake silty clay loam, overwash--	---	---	---	---	None	Hig
221yu:						
Sites loam----------	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Hig
222yu:						
Sites loam----------	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Hig
225yu:						
Sites gravelly loam, bedrock substratum----------	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Hig
226yu:						
Sites gravelly loam, bedrock substratum----------	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Hig
227yu:						
Sites gravelly loam, bedrock substratum----------	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Hig
242yu:						
Surnuf loam----------	Abrupt textural change	---	---	---	None	Mod
243yu:						
Surnuf loam----------	Abrupt textural change	---	---	---	None	Mod
244yu:						
Surnuf loam----------	Abrupt textural change	---	---	---	None	Mod
245:						
Surnuf loam----------	Abrupt textural change	---	---	---	None	Mod

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	
	Kind	Depth to top	Thickness	Hardness		
		In	In			
248yu:						
Trainer loam	---	---	---	---	None	Hig
250:						
Llanoseco, occasionally flooded	Duripan	60-120	---	Indurated	None	Hig
252:						
Whitecabin silty clay, occasionally flooded	Duripan	40-60	---	Indurated	None	Hig
Ordferry silty clay, occasionally flooded	Duripan	20-40	---	Indurated	None	Hig
252yu:						
Woodleaf gravelly loam	Bedrock (lithic)	20-40	---	Indurated	None	Mod
253yu:						
Woodleaf gravelly loam	Bedrock (lithic)	20-40	---	Indurated	None	Mod
255:						
Whitecabin silty clay loam, occasionally flooded	Duripan	40-60	---	Strongly cemented	None	Hig
Ordferry silty clay, occasionally flooded	Duripan	20-40	---	Indurated	None	Hig
256:						
Whitecabin silt loam, occasionally flooded	Duripan	40-60	---	Moderately cemented	None	Hig
257:						
Llanoseco, frequently flooded	Duripan	60-120	---	Indurated	None	Hig
258:						
Codora, occasionally flooded	---	---	---	---	None	Hig
260:						
Ordferry silty clay, occasionally flooded	Duripan	20-40	---	Indurated	None	Hig
280:						
Columbia taxadjunct stratified very fine sandy loam	---	---	---	---	None	Hig

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
290:						
Perkins gravelly loam	---	---	---	---	None	Low
300:						
Redsluff gravelly loam	---	---	---	---	None	Low
301:						
Wafap gravelly loam	Duripan	40-60	---	Indurated	None	Hig
Hamslough clay	Duripan	20-40	---	Strongly cemented	None	Hig
302:						
Redtough loam	Duripan	10-20	---	Indurated	None	Mod
Redswale cobbly loam	Duripan	4-10	---	Indurated	None	Mod
303:						
Munjar gravelly loam	Duripan	20-40	---	Strongly cemented	None	Mod
Tuscan taxadjunct gravelly clay loam	Duripan	20-40	---	Indurated	None	Mod
Galt clay	Duripan	20-40	4-17	Moderately cemented	None	Hig
304:						
Redtough loam	Duripan	10-20	---	Indurated	None	Mod
305:						
Redtough gravelly loam	Duripan	10-20	---	Indurated	None	Hig
Redswale loam	Duripan	4-10	---	Indurated	None	Hig
Anita, gravelly duripan	Duripan	10-20	4-17	Strongly cemented	None	Hig
306:						
Duric Xerarents, fill	Duripan	14-80	---	Indurated	None	Hig
Duric Xerarents, cut	Duripan	4-22	---	Indurated	None	Hig
307:						
Duric Xerarents clay loam, leveled	Duripan	10-40	---	Indurated	None	Hig
310:						
Kimball loam	Abrupt textural change	---	---	---	None	Mod

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
317:						
Thompsonflat loam	---	---	---	---	None	Mod
318:						
Thompsonflat fine sandy loam	---	---	---	---	None	Mod
Oroville gravelly fine sandy loam	Duripan	20-40	---	Indurated	None	Hig
320:						
Vistarobles sandy loam	Duripan	10-20	4-17	Indurated	None	Hig
Redding loam	Duripan	20-40	---	Strongly cemented	None	Mod
321:						
Durixeralfs, fine-loamy, gravelly fine sandy loam	Duripan	20-40	12-24	Indurated	None	Hig
	Bedrock (paralithic)	32-64	---	Moderately cemented		
Durixeralfs, loamy-skeletal, gravelly fine sandy loam	Duripan	9-20	12-24	Indurated	None	Hig
	Bedrock (paralithic)	21-44	---	Moderately cemented		
Typic Petraquepts silty clay	Duripan	10-20	12-24	Indurated	None	Hig
	Bedrock (paralithic)	22-44	---	Moderately cemented		
330:						
Wilsoncreek loam, occasionally flooded	---	---	---	---	None	Mod
Trainer loam, occasionally flooded	---	---	---	---	None	Hig
331:						
Thompsonflat loam	---	---	---	---	None	Mod
335:						
Galt clay loam	Duripan	20-40	---	Moderately cemented	None	Hig
336:						
Galt clay	Duripan	20-40	4-17	Moderately cemented	None	Hig

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
337:						
Galt clay loam	Duripan	20-40	---	Moderately cemented	None	Hig
338:						
Oxyaquic Xerofluvents silt loam	Abrupt textural change	40-80	---	---	None	Hig
339:						
Oxyaquic Xerofluvents sandy loam, frequently flooded	Abrupt textural change	40-80	---	---	None	Hig
340:						
Rock outcrop, Lovejoy basalt.						
Thermalrocks very gravelly loam	Bedrock (lithic)	5-10	---	Indurated	None	Hig
Campbellhills gravelly loam	Bedrock (lithic)	40-60	---	Indurated	None	Hig
341:						
Elsey loam	Bedrock (lithic)	20-40	---	Indurated	None	Hig
Beatsonhollow gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Hig
Campbellhills gravelly loam	Bedrock (lithic)	40-60	---	Indurated	None	Hig
Rock outcrop, Lovejoy basalt.						
342:						
Thermalrocks very gravelly loam	Bedrock (lithic)	5-10	---	Indurated	None	Hig
Beatsonhollow taxadjunct fine sandy loam	Bedrock (lithic)	10-20	---	Indurated	None	Hig
Rock outcrop, Lovejoy basalt.						
343:						
Coalcanyon very cobbly loam	---	---	---	---	None	Mod
Coonhollow gravelly loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Mod

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	
	Kind	Depth to top	Thickness	Hardness		
		In	In			
344:						
Coalcanyon very cobbly loam----------	---	---	---	---	None	Mo
Coonhollow gravelly loam----------	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Mo
Rock outcrop, Lovejoy basalt.						
346:						
Cherotable loam----------	Bedrock (lithic)	40-60	---	Indurated	None	Hig
Elsey loam----------	Bedrock (lithic)	20-40	---	Indurated	None	
347:						
Haplic Palexeralfs loam----------	Duripan	60-90	---	Extremely weakly cemented	None	Mo
353:						
Cherokeespring gravelly silt loam-----	---	---	---	---	None	Mo
355:						
Coalcanyon very cobbly loam----------	---	---	---	---	None	Mo
Talus.						
356:						
Coalcanyon very cobbly loam----------	---	---	---	---	None	Mo
Rock outcrop, basalt cliffs.						
Talus.						
Coonhollow gravelly loam----------	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Mo
360:						
Typic Xerofluvents, coarse-loamy------	---	---	---	---	None	Mo
Typic Xerofluvents, sandy-skeletal----	---	---	---	---	None	Mo
361:						
Typic Xerofluvents, sandy-skeletal----	---	---	---	---	None	Mo

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
362:						
Ultic Haploxeralfs, sandstone, low elevation, very deep	Bedrock (paralithic)	60-90	---	Moderately cemented	None	Mod
Ultic Haploxeralfs, sandstone, low elevation, deep	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Mod
363:						
Ultic Haploxeralfs, sandstone, low elevation, very deep	Bedrock (paralithic)	60-90	---	Moderately cemented	None	Mod
Ultic Haploxeralfs, sandstone, low elevation, deep	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Mod
364:						
Ultic Haploxeralfs, sandstone, low elevation, deep	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Mod
Ultic Haploxeralfs, sandstone, low elevation, very deep	Bedrock (paralithic)	60-90	---	Moderately cemented	None	Mod
365:						
Palexerults gravelly loam	Bedrock (densic)	60-90	---	Noncemented	None	Hig
366:						
Palexerults gravelly loam	Bedrock (densic)	60-90	---	Noncemented	None	Hig
370:						
Palexerults gravelly loam	Bedrock (densic)	60-90	---	Noncemented	None	Hig
375:						
Wickscorner loam	Duripan	60-87	---	Extremely weakly cemented	None	Mod
376:						
Flagcanyon gravelly loam	Duripan	20-40	---	Moderately cemented	None	Mod

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	
	Kind	Depth to top	Thickness	Hardness		
		In	In			
376:						
Wickscorner loam	Duripan	60-84	---	Extremely weakly cemented	None	Mo
377:						
Flagcanyon taxadjunct fine sandy loam	Duripan	20-40	---	Extremely weakly cemented	None	Hi
		40-60	---	Indurated		
Durixeralfs, clayey-skeletal, loam	Duripan	10-20	---	Extremely weakly cemented	None	Hi
Duraquerts gravelly clay	Duripan	20-40	---	Extremely weakly cemented	None	Hi
400:						
Subaco taxadjunct clay	Duripan	20-40	---	Indurated	None	Hi
	Dense material	40-60	---	Noncemented		
415:						
Ignord fine sandy loam	---	---	---	---	None	Lo
416:						
Calcic Haploxerolls sandy loam	Dense material	40-60	---	Noncemented	None	Lo
418:						
Almendra loam	---	---	---	---	None	Lo
419:						
Conejo fine sandy loam, overwash	---	---	---	---	None	Mo
420:						
Conejo clay loam	---	---	---	---	None	Mo
425:						
Vina fine sandy loam	---	---	---	---	None	Lo
426:						
Vina loam	---	---	---	---	None	Lo
439:						
Oxyaquic Xerofluvents clay	Abrupt textural change	24-80	---	---	None	Hi

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
440:						
Oxyaquic Xerofluvents silt loam, frequently flooded	Abrupt textural change	24-80	---	---	None	Hig
441:						
Oxyaquic Xerofluvents very fine sandy loam	Abrupt textural change	24-80	---	---	None	Hig
442:						
Durixerolls clay loam	Duripan	20-40	---	Indurated	None	Mod
Haploxerolls clay loam	Duripan	40-60	---	Indurated	None	Mod
443:						
Durixerolls loam	Duripan	20-40	---	Moderately cemented	None	Mod
Haploxerolls loam	Duripan	40-60	---	Indurated	None	Mod
445:						
Chico loam	---	---	---	---	None	Mod
447:						
Charger fine sandy loam	---	---	---	---	None	Low
448:						
Haploxerolls clay loam	Dense material	60-80	---	Noncemented	None	Mod
449:						
Haploxerolls loam	Dense material	60-80	---	Noncemented	None	Low
500:						
Lofgren clay	Duripan	40-60	4-17	Indurated	None	Hig
Blavo clay	Duripan	20-40	4-17	Indurated	None	Hig
501:						
Lofgren clay, occasionally flooded	Duripan	40-60	4-17	Indurated	None	Hig
Blavo clay, occasionally flooded	Duripan	20-40	---	Indurated	None	Hig

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	
	Kind	Depth to top	Thickness	Hardness		
		In	In			
502:						
Blavo silt loam, overwash, occasionally flooded	Duripan	20-40	4-17	Indurated	None	Hig
519:						
Edjobe silty clay	Duripan	60-80	---	Moderately cemented	None	Hig
520:						
Esquon clay	Duripan	40-60	---	Moderately cemented	None	Hig
Neerdobe clay	Duripan	20-40	---	Indurated	None	Hig
521:						
Neerdobe silt loam, overwash	Duripan	20-60	---	Strongly cemented	None	Hig
522:						
Clear Lake silty clay loam, overwash	---	---	---	---	None	Hig
523:						
Esquon silty clay loam, overwash	Duripan	40-60	---	Strongly cemented	None	Hig
525:						
Govstanford loam	Abrupt textural change	20-36	---	---	None	Hig
526:						
Govstanford loam, occasionally flooded	Abrupt textural change	20-36	---	---	None	Hig
528:						
Neerdobe clay loam	Duripan	20-40	---	Strongly cemented	None	Hig
550:						
Dunstone loam, dry	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Lou
Loafercreek silt loam, dry	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Lou
551:						
Dunstone loam, dry	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Lou

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
551:						
Lomarica loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low
Argonaut taxadjunct loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Hig
552:						
Dunstone gravelly loam	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low
	Bedrock (lithic)	20-40	---	Indurated		
Loafercreek gravelly loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low
	Bedrock (lithic)	40-60	---	Indurated		
553:						
Dunstone gravelly loam	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low
	Bedrock (lithic)	20-40	---	Indurated		
Loafercreek gravelly loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low
	Bedrock (lithic)	40-60	---	Indurated		
554:						
Dunstone gravelly loam	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low
	Bedrock (lithic)	20-40	---	Indurated		
Loafercreek gravelly loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low
	Bedrock (lithic)	40-60	---	Indurated		
555:						
Dunstone gravelly loam	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low
	Bedrock (lithic)	20-40	---	Indurated		
Loafercreek gravelly loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low
	Bedrock (lithic)	40-60	---	Indurated		

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
556:						
Mounthope loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
Hartsmill gravelly loam	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low
557:						
Mounthope loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
Hartsmill gravelly loam	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low
558:						
Hartsmill gravelly loam	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low
Mounthope loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
559:						
Hartsmill gravelly loam	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low
Mounthope loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
560:						
Hartsmill gravelly loam	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low
Mounthope loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
561:						
Bigridge loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
Minniecreek loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low
562:						
Bigridge loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
562:						
Minniecreek loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low
563:						
Bigridge loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
Minniecreek loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low
564:						
Bigridge loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
Minniecreek loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low
565:						
Dunstone loam, dry	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low
Argonaut taxadjunct loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Hig
Sunnyslope loam	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Mod
566:						
Dunstone loam, dry	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low
Loafercreek silt loam, dry	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low
Katskillhill loam	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Hig
567:						
Dunstone loam, dry	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low
Loafercreek silt loam, dry	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
567:						
Argonaut taxadjunct loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Hig
577:						
Parkshill coarse sandy loam	---	---	---	---	None	Low
Flanly loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low
Hurleton gravelly sandy loam	Bedrock (lithic)	20-40	---	Indurated	None	Low
578:						
Flanly loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low
Swedesflat cobbly fine sandy loam	Bedrock (paralithic)	10-20	---	Weakly cemented	None	Low
580:						
Surnuf taxadjunct loam	---	---	---	---	None	Mod
Griffgulch very gravelly silt loam	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Hig
Rock outcrop, metavolcanic.						
581:						
Surnuf taxadjunct loam	---	---	---	---	None	Mod
Griffgulch very gravelly silt loam	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Hig
582:						
Surnuf taxadjunct loam	---	---	---	---	None	Mod
Griffgulch very gravelly silt loam	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Hig
583:						
Surnuf taxadjunct loam	---	---	---	---	None	Mod
Griffgulch very gravelly silt loam	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Hig

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
584:						
Flanly loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low
Swedesflat cobbly fine sandy loam	Bedrock (paralithic)	10-20	---	Weakly cemented	None	Low
Rackerby very gravelly sandy loam	Bedrock (paralithic)	10-20	---	Weakly cemented	None	Low
585:						
Flanly loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Low
Sommeyflat loam	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low
586:						
Sommeyflat loam	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low
Mounthope loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
587:						
Sommeyflat loam	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Low
Mounthope loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
Hurleton gravelly sandy loam	Bedrock (lithic)	20-40	---	Indurated	None	Low
588:						
Ultic Haploxeralfs, thermic, high terrace	Cemented horizon	20-60	---	Extremely weakly cemented	None	Mod
589:						
Ultic Haploxeralfs, thermic, high terrace	Cemented horizon	20-60	---	Extremely weakly cemented	None	Mod
590:						
Vistarobles sandy loam	Duripan	10-20	---	Indurated	None	Hig
Redding loam	Duripan	20-40	---	Strongly cemented	None	Mod

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
590:						
Argonaut taxadjunct loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Hig
Haploxererts gravelly silty clay	Bedrock (paralithic)	40-60	---	Weakly cemented	None	Hig
603:						
Oroville gravelly fine sandy loam	Duripan	20-40	---	Indurated	None	Hig
Thermalito sandy loam	Duripan	20-40	---	Indurated	None	Hig
Fernandez sandy loam	Duripan	60-81	---	Weakly cemented	None	Hig
Thompsonflat fine sandy loam	---	---	---	---	None	Mod
605:						
Duric Xerarents fine sandy loam, leveled	Duripan	10-40	0-3	Indurated	None	Hig
Oroville gravelly fine sandy loam	Duripan	20-40	---	Indurated	None	Hig
606:						
Redtough loam	Duripan	10-20	---	Indurated	None	Mod
Fallager loam	Duripan	4-10	---	Indurated	None	Mod
Anita, gravelly duripan	Duripan	10-20	4-17	Indurated	None	Hig
609:						
Anita, gravelly duripan	Duripan	10-20	4-17	Strongly cemented	None	Hig
Tuscan taxadjunct gravelly clay loam	Duripan	20-40	---	Indurated	None	Mod
614:						
Doemill gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Mod
Jokerst very cobbly loam	Bedrock (lithic)	2-10	---	Indurated	None	Mod
615:						
Doemill gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Mod
Jokerst very cobbly loam	Bedrock (lithic)	2-10	---	Indurated	None	Mod

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
616:						
Jokerst very cobbly loam	Bedrock (lithic)	2-10	---	Indurated	None	Mod
Doemill gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Mod
Typic Haploxeralfs gravelly loam	Bedrock (paralithic)	20-60	---	Weakly cemented	None	Mod
	Bedrock (lithic)	20-60	---	Strongly cemented		
617:						
Doemill gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Mod
Jokerst very cobbly loam	Bedrock (lithic)	2-10	---	Indurated	None	Mod
Typic Haploxeralfs gravelly loam	Bedrock (paralithic)	20-60	---	Weakly cemented	None	Mod
	Bedrock (lithic)	20-60	---	Strongly cemented		
619:						
Carhart taxadjunct clay	Bedrock (lithic)	10-20	---	Indurated	None	Hig
620:						
Doemill gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Mod
Jokerst very cobbly loam	Bedrock (lithic)	2-10	---	Indurated	None	Mod
Ultic Haploxeralfs, thermic, gravelly loam	Bedrock (lithic)	20-40	---	Strongly cemented	None	Hig
	Bedrock (paralithic)	20-40	---	Moderately cemented		
621:						
Doemill gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Mod
Jokerst very cobbly loam	Bedrock (lithic)	2-10	---	Indurated	None	Mod
Ultic Haploxeralfs, thermic, gravelly loam	Bedrock (lithic)	20-40	---	Strongly cemented	None	Hig
	Bedrock (paralithic)	20-40	---	Moderately cemented		
622:						
Xerorthents, shallow	Bedrock (lithic)	2-20	---	Strongly cemented	None	Mod
	Bedrock (paralithic)	2-20	---	Moderately cemented		

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
622:						
Typic Haploxeralfs gravelly loam------	Bedrock (paralithic)	20-60	---	Weakly cemented	None	Mod
	Bedrock (lithic)	20-60	---	Strongly cemented		
Rock outcrop, mudflow-breccia cliffs.						
623:						
Xerorthents, shallow------------------	Bedrock (lithic)	2-20	---	Strongly cemented	None	Mod
	Bedrock (paralithic)	2-20	---	Moderately cemented		
Typic Haploxeralfs gravelly loam------	Bedrock (paralithic)	20-60	---	Weakly cemented	None	Mod
	Bedrock (lithic)	20-60	---	Strongly cemented		
Rock outcrop, mudflow-breccia cliffs.						
624:						
Ultic Haploxeralfs, mesic, gravelly loam----------	Bedrock (paralithic)	20-60	---	Moderately cemented	None	Mod
	Bedrock (lithic)	20-60	---	Strongly cemented		
Rockstripe very gravelly loam---------	Bedrock (lithic)	2-10	---	Indurated	None	Hig
625:						
Ultic Haploxeralfs, mesic, gravelly loam----------	Bedrock (paralithic)	20-60	---	Moderately cemented	None	Mod
	Bedrock (lithic)	20-60	---	Strongly cemented		
Rockstripe very gravelly loam---------	Bedrock (lithic)	2-10	---	Indurated	None	Hig
626:						
Ultic Haploxeralfs gravelly loam------	Bedrock (paralithic)	20-60	---	Extremely weakly cemented	None	Mod
	Bedrock (lithic)	20-60	---	Strongly cemented		
Rockstripe very gravelly loam---------	Bedrock (lithic)	2-10	---	Indurated	None	Hig
Rock outcrop, mudflow-breccia cliffs.						

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
627:						
Ultic Haploxeralfs gravelly loam------	Bedrock (paralithic)	20-60	---	Extremely weakly cemented	None	Mod
	Bedrock (lithic)	20-60	---	Strongly cemented		
Rockstripe very gravelly loam---------	Bedrock (lithic)	2-10	---	Indurated	None	Hig
Rock outcrop, mudflow-breccia cliffs.						
628:						
Rockstripe very gravelly loam---------	Bedrock (lithic)	2-10	---	Indurated	None	Hig
Ultic Haploxeralfs gravelly loam------	Bedrock (paralithic)	20-60	---	Extremely weakly cemented	None	Mod
	Bedrock (lithic)	20-60	---	Strongly cemented		
Rock outcrop, mudflow-breccia cliffs.						
629:						
Slideland gravelly loam---------------	---	---	---	---	None	Low
630:						
Slideland gravelly loam---------------	---	---	---	---	None	Low
631:						
Slideland gravelly loam---------------	---	---	---	---	None	Low
632:						
Ultic Haploxeralfs, conglomerate, very deep----------	---	---	---	---	None	Mod
Ultic Haploxeralfs, conglomerate, moderately deep----------	Bedrock (paralithic)	20-40	---	Very weakly cemented	None	Low
633:						
Ultic Haploxeralfs, conglomerate, very deep----------	---	---	---	---	None	Mod
Ultic Haploxeralfs, conglomerate, moderately deep----------	Bedrock (paralithic)	20-40	---	Very weakly cemented	None	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	
	Kind	Depth to top	Thickness	Hardness		
		In	In			
634:						
Ultic Haploxeralfs, conglomerate, very deep	---	---	---	---	None	Mo
Ultic Haploxeralfs, conglomerate, moderately deep	Bedrock (paralithic)	20-40	---	Very weakly cemented	None	Lo
635:						
Ultic Haploxeralfs, conglomerate, very deep	Bedrock (paralithic)	60-90	---	Very weakly cemented	None	Mo
Ultic Haploxeralfs, conglomerate, moderately deep	Bedrock (paralithic)	20-40	---	Very weakly cemented	None	Lo
636:						
Ultic Haploxeralfs, conglomerate, moderately deep	Bedrock (paralithic)	20-40	---	Very weakly cemented	None	Lo
Ultic Haploxeralfs, conglomerate, very deep	Bedrock (paralithic)	60-90	---	Very weakly cemented	None	Mo
637:						
Ultic Haploxeralfs, sandstone	Bedrock (paralithic)	40-80	---	Weakly cemented	None	Lo
638:						
Ultic Haploxeralfs, sandstone	Bedrock (paralithic)	40-80	---	Weakly cemented	None	Lo
639:						
Ultic Haploxeralfs, sandstone	Bedrock (paralithic)	40-80	---	Weakly cemented	None	Lo
640:						
Ultic Haploxeralfs, sandstone	Bedrock (paralithic)	40-80	---	Weakly cemented	None	Lo
641:						
Ultic Haploxeralfs, sandstone	Bedrock (paralithic)	40-80	---	Weakly cemented	None	Lo

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
642:						
Chinacamp gravelly loam	---	---	---	---	None	Low
643:						
Chinacamp gravelly loam	---	---	---	---	None	Low
644:						
Chinacamp gravelly loam	---	---	---	---	None	Low
645:						
Chinacamp gravelly loam	---	---	---	---	None	Low
646:						
Coalcanyon taxadjunct very gravelly loam	---	---	---	---	None	Low
647:						
Coalcanyon taxadjunct very gravelly loam	---	---	---	---	None	Low
648:						
Coalcanyon taxadjunct very gravelly loam	---	---	---	---	None	Low
649:						
Coalcanyon taxadjunct very gravelly loam	---	---	---	---	None	Low
650:						
Schott very gravelly loam	Bedrock (lithic)	40-60	---	Strongly cemented	None	Hig
651:						
Schott very gravelly loam	Bedrock (lithic)	40-60	---	Strongly cemented	None	Hig
652:						
Schott very gravelly loam	Bedrock (lithic)	40-60	---	Strongly cemented	None	Hig
Rock outcrop, mudflow breccia.						
654:						
Coridge bouldery loam	Bedrock (lithic)	20-40	---	Indurated	None	Mod
Rock outcrop, Cohasset basalt.						

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
655:						
Coridge bouldery loam	Bedrock (lithic)	20-40	---	Indurated	None	Mod
Rock outcrop, Cohasset basalt.						
656:						
Rock outcrop, basalt cliffs.						
Coalcanyon taxadjunct very gravelly loam	---	---	---	---	None	Low
657:						
Bonneyridge sandy loam	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Mod
Chawanakee gravelly sandy loam	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low
Rock outcrop, quartz diorite.						
658:						
Bonneyridge sandy loam	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Mod
Chawanakee gravelly sandy loam	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low
Rock outcrop, quartz diorite.						
659:						
Bonneyridge sandy loam	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Mod
Chawanakee gravelly sandy loam	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low
Rock outcrop, quartz diorite.						
660:						
Bonneyridge sandy loam	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Mod
Chawanakee gravelly sandy loam	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low
Rock outcrop, quartz diorite.						

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
661:						
Millerridge gravelly sandy clay loam--	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Low
Boxrobber cobbly sandy clay loam------	Bedrock (paralithic)	10-20	---	Weakly cemented	None	Low
	Bedrock (lithic)	20-79	---	Very strongly cemented		
662:						
Millerridge gravelly sandy clay loam--	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Low
Boxrobber cobbly sandy clay loam------	Bedrock (paralithic)	10-20	---	Weakly cemented	None	Low
	Bedrock (lithic)	20-79	---	Very strongly cemented		
663:						
Millerridge gravelly sandy clay loam--	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Low
Boxrobber cobbly sandy clay loam------	Bedrock (paralithic)	10-20	---	Weakly cemented	None	Low
	Bedrock (lithic)	20-79	---	Very strongly cemented		
664:						
Millerridge gravelly sandy clay loam--	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Low
Boxrobber cobbly sandy clay loam------	Bedrock (paralithic)	10-20	---	Weakly cemented	None	Low
	Bedrock (lithic)	20-79	---	Very strongly cemented		
665:						
Surnuf gravelly loam----------	---	---	---	---	None	Hig
Bigridge loam----------	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
666:						
Surnuf gravelly loam----------	---	---	---	---	None	Hig

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	
	Kind	Depth to top	Thickness	Hardness		
		In	In			
666:						
Bigridge loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Lo
667:						
Surnuf gravelly loam	---	---	---	---	None	Hi
Bigridge loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Lo
668:						
Surnuf gravelly loam	---	---	---	---	None	Hi
Bigridge loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Lo
669:						
Oroshore gravelly loam	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Lo
Mounthope loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Lo
Dunstone gravelly loam	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Lo
	Bedrock (lithic)	20-40	---	Indurated		
670:						
Oroshore gravelly loam	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Lo
Mounthope loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Lo
Dunstone gravelly loam	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Lo
	Bedrock (lithic)	20-40	---	Indurated		
671:						
Oroshore gravelly loam	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Lo
Mounthope loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Lo

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
671:						
Dunstone gravelly loam	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low
	Bedrock (lithic)	20-40	---	Indurated		
672:						
Oroshore gravelly loam	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Low
Mounthope loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
Dunstone gravelly loam	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Low
	Bedrock (lithic)	20-40	---	Indurated		
674:						
Chawanakee gravelly sandy loam	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low
Bonneyridge sandy loam	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Mod
Rock outcrop, quartz diorite.						
675:						
Clearhayes sandy clay loam	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Low
Hamslough clay	Duripan	20-40	24-48	Strongly cemented	None	Hig
	Bedrock (paralithic)	44-88	---	Moderately cemented		
676:						
Carhart clay	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Hig
Anita taxadjunct clay	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Hig
677:						
Tuscan gravelly loam	Duripan	10-20	1-36	Very strongly cemented	None	Hig
	Bedrock (paralithic)	11-56	---	Moderately cemented		

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	
	Kind	Depth to top	Thickness	Hardness		
		In	In			
677:						
Fallager loam	Duripan	4-10	1-36	Very strongly cemented	None	Mo
	Bedrock (paralithic)	5-46	---	Moderately cemented		
Anita, gravelly duripan	Duripan	10-20	1-36	Strongly cemented	None	Hi
	Bedrock (paralithic)	11-56	---	Moderately cemented		
679:						
Lucksev loam	Bedrock (paralithic)	4-20	---	Moderately cemented	None	Mo
Butteside gravelly loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Mo
Carhart clay	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Hi
680:						
Lucksev loam	Bedrock (paralithic)	4-20	---	Moderately cemented	None	Mo
Butteside gravelly loam	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Mo
683:						
Typic Haploxeralfs, magnesic, low elevation	Bedrock (lithic)	20-40	---	Indurated	None	Mo
Earlal very gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Lo
Rock outcrop, serpentinite.						
684:						
Typic Haploxeralfs, magnesic, low elevation	Bedrock (lithic)	20-40	---	Indurated	None	Mo
Earlal very gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Lo
Rock outcrop, serpentinite.						

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
685:						
Bosquejo taxadjunct, gravelly substratum	Dense material	40-80	40-140	Very weakly cemented	None	Hig
	Bedrock (paralithic)	80-180	---	Moderately cemented		
686:						
Redsluff taxadjunct clay loam	Bedrock (paralithic)	60-85	---	Extremely weakly cemented	None	Hig
687:						
Xerorthents, shallow	Bedrock (lithic)	2-20	---	Strongly cemented	None	Mod
	Bedrock (paralithic)	2-20	---	Moderately cemented		
Typic Haploxeralfs gravelly loam	Bedrock (paralithic)	20-60	---	Weakly cemented	None	Mod
	Bedrock (lithic)	20-60	---	Strongly cemented		
700:						
Retsongulch very gravelly sandy loam	Bedrock (lithic)	20-40	---	Strongly cemented	None	Mod
Flumewall gravelly sandy loam	Bedrock (lithic)	10-20	---	Indurated	None	Mod
701:						
Powellton gravelly loam	---	---	---	---	None	Mod
Obstruction gravelly sandy loam	Bedrock (paralithic)	60-96	---	Moderately cemented	None	Low
702:						
Cerpone gravelly loam	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Mod
Typic Haploxeralfs, magnesic, very gravelly loam	Bedrock (lithic)	20-80	---	Indurated	None	
Earlal very gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Low
703:						
Cerpone gravelly loam	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Mod
Typic Haploxeralfs, magnesic, very gravelly loam	Bedrock (lithic)	20-80	---	Indurated	None	Mod

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	
	Kind	Depth to top	Thickness	Hardness		
		In	In			
703:						
Earlal very gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Lo
Rock outcrop, serpentinite.						
704:						
Typic Haploxeralfs, magnesic, very gravelly loam	Bedrock (lithic)	20-80	---	Indurated	None	Mo
Earlal very gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Lo
Cerpone gravelly loam	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Mo
Rock outcrop, serpentinite.						
705:						
Typic Haploxeralfs, magnesic, very gravelly loam	Bedrock (lithic)	20-80	---	Indurated	None	Mo
Earlal very gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Lo
Cerpone gravelly loam	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Mo
Rock outcrop, serpentinite.						
711:						
Dixmine very gravelly loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Hi
Toadtown loam	Bedrock (paralithic)	60-120	---	Extremely weakly cemented	None	Mo
712:						
Dixmine very gravelly loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Hi
Toadtown loam	Bedrock (paralithic)	60-120	---	Extremely weakly cemented	None	Mo
713:						
Dixmine very gravelly loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Hi

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
713:						
Toadtown loam	Bedrock (paralithic)	60-120	---	Extremely weakly cemented	None	Mod
714:						
Dixmine very gravelly loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Hig
Toadtown loam	Bedrock (paralithic)	60-120	---	Extremely weakly cemented	None	Mod
715:						
Logtrain gravelly loam	Bedrock (lithic)	40-60	---	Strongly cemented	None	Hig
Bottlehill very gravelly loam	Bedrock (lithic)	20-40	---	Very strongly cemented	None	Hig
Walkermine very gravelly loam	Bedrock (lithic)	4-20	---	Indurated	None	Hig
716:						
Griffgulch very gravelly silt loam	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Hig
Surnuf gravelly loam	---	---	---	---	None	Hig
717:						
Griffgulch very gravelly silt loam	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Hig
Surnuf gravelly loam	---	---	---	---	None	Hig
718:						
Griffgulch very gravelly silt loam	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Hig
Surnuf gravelly loam	---	---	---	---	None	Hig
Spine taxadjunct very cobbly loam	Bedrock (lithic)	10-20	---	Indurated	None	Mod
719:						
Griffgulch very gravelly silt loam	Bedrock (lithic)	40-60	---	Very strongly cemented	None	Hig
Surnuf gravelly loam	---	---	---	---	None	Hig
Spine taxadjunct very cobbly loam	Bedrock (lithic)	10-20	---	Indurated	None	Mod

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	
	Kind	Depth to top	Thickness	Hardness		
		In	In			
720:						
Dystroxerepts extremely gravelly loam	Bedrock (lithic)	20-60	---	Indurated	None	Mo
Haploxeralfs very gravelly loam-------	Bedrock (lithic)	20-60	---	Indurated	None	Mo
Rock outcrop, metavolcanic.						
721:						
Haploxerands, granitic till, medial sandy loam----------	Dense material	20-98	---	Noncemented	Low	Lo
722:						
Haploxerands, granitic till, medial sandy loam----------	Dense material	20-98	---	Noncemented	Low	Lo
723:						
Haploxerands, granitic till, medial sandy loam----------	Dense material	20-98	---	Noncemented	Low	Lo
724:						
Haploxerands, volcanic till, cobbly medial sandy loam----------	Dense material	20-98	---	Noncemented	Low	Hi
725:						
Haploxerands, volcanic till, cobbly medial sandy loam----------	Dense material	20-98	---	Noncemented	Low	Hi
726:						
Haploxerands, volcanic till, cobbly medial sandy loam----------	Dense material	20-98	---	Noncemented	Low	Hi
727:						
Bonneyridge sandy loam----------	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Mo
728:						
Bonneyridge sandy loam----------	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Mo
729:						
Bonneyridge sandy loam----------	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Mo

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
730:						
Tusccoll gravelly loam	Bedrock (paralithic)	60-120	---	Moderately cemented	None	Mod
Schott very gravelly loam	Bedrock (lithic)	40-60	---	Strongly cemented	None	Hig
731:						
Tusccoll gravelly loam	Bedrock (paralithic)	60-120	---	Moderately cemented	None	Mod
Schott very gravelly loam	Bedrock (paralithic)	40-60	---	Strongly cemented	None	Hig
732:						
Bonepile taxadjunct, duripan substratum	Duripan	40-60	---	Moderately cemented	None	Mod
733:						
Haploxeralfs, terrace, gravelly loam	---	---	---	---	None	Low
734:						
Haploxerands medial sandy loam	Bedrock (paralithic)	20-118	---	Weakly cemented	High	Mod
Aquic Xerofluvents peaty very fine sandy loam	---	---	---	---	High	Hig
735:						
Fluvaquents, loamy	---	---	---	---	None	Hig
801:						
Obstruction gravelly sandy loam	Bedrock (paralithic)	60-96	---	Moderately cemented	None	Low
802:						
Obskel very gravelly sandy loam	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Low
Obstruction gravelly sandy loam	Bedrock (paralithic)	60-96	---	Moderately cemented	None	Low
803:						
Obskel very gravelly sandy loam	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
803:						
Obstruction gravelly sandy loam-------	Bedrock (paralithic)	60-96	---	Moderately cemented	None	Low
804:						
Obskel very gravelly sandy loam-------	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Low
Obstruction gravelly sandy loam-------	Bedrock (paralithic)	60-96	---	Moderately cemented	None	Low
Retsongulch very gravelly sandy loam--	Bedrock (lithic)	20-40	---	Strongly cemented	None	Mod
805:						
Bottlehill very gravelly loam---------	Bedrock (lithic)	20-40	---	Very strongly cemented	None	Hig
Walkermine very gravelly loam---------	Bedrock (lithic)	4-20	---	Indurated	None	Hig
Logtrain gravelly loam----------------	Bedrock (lithic)	40-60	---	Strongly cemented	None	Hig
806:						
Bottlehill very gravelly loam---------	Bedrock (lithic)	20-40	---	Very strongly cemented	None	Hig
Walkermine very gravelly loam---------	Bedrock (lithic)	4-20	---	Indurated	None	Hig
Logtrain gravelly loam----------------	Bedrock (lithic)	40-60	---	Strongly cemented	None	Hig
807:						
Bottlehill very gravelly loam---------	Bedrock (lithic)	20-40	---	Very strongly cemented	None	Hig
Logtrain gravelly loam----------------	Bedrock (lithic)	40-60	---	Strongly cemented	None	Hig
Walkermine very gravelly loam---------	Bedrock (lithic)	4-20	---	Indurated	None	Hig
808:						
Bottlehill very gravelly loam---------	Bedrock (lithic)	20-40	---	Very strongly cemented	None	Hig
Walkermine very gravelly loam---------	Bedrock (lithic)	4-20	---	Indurated	None	Hig
Logtrain gravelly loam----------------	Bedrock (lithic)	40-60	---	Strongly cemented	None	Hig

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
809:						
Walkermine very gravelly loam---------	Bedrock (lithic)	4-20	---	Indurated	None	Hig
Bottlehill very gravelly loam---------	Bedrock (lithic)	20-40	---	Very strongly cemented	None	Hig
Logtrain gravelly loam----------	Bedrock (lithic)	40-60	---	Strongly cemented	None	Hig
Rock outcrop, metavolcanic.						
810:						
Dixmine very gravelly loam----------	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Hig
Mac gravelly loam----------	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Mod
Spine very gravelly loam----------	Bedrock (lithic)	10-20	---	Indurated	None	Mod
811:						
Powellton gravelly loam----------	---	---	---	---	None	Mod
Toadtown loam----------	Bedrock (paralithic)	60-120	---	Extremely weakly cemented	None	Mod
812:						
Powellton gravelly loam----------	---	---	---	---	None	Mod
Toadtown loam----------	Bedrock (paralithic)	60-120	---	Extremely weakly cemented	None	Mod
813:						
Powellton gravelly loam----------	---	---	---	---	None	Mod
Toadtown loam----------	Bedrock (paralithic)	60-120	---	Extremely weakly cemented	None	Mod
814:						
Mountyana gravelly loam----------	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Hig
815:						
Mountyana gravelly loam----------	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Hig

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
817:						
Lydon very gravelly medial coarse sandy loam	Bedrock (lithic)	20-40	---	Indurated	None	Hig
818:						
Lydon very gravelly medial coarse sandy loam	Bedrock (lithic)	20-40	---	Indurated	None	Hig
819:						
Lydon very gravelly medial coarse sandy loam	Bedrock (lithic)	20-40	---	Indurated	None	Hig
Rock outcrop, mudflow breccia.						
820:						
Lydon very gravelly medial coarse sandy loam	Bedrock (lithic)	20-40	---	Indurated	None	Hig
Rock outcrop, mudflow breccia.						
821:						
Lydon very gravelly medial coarse sandy loam	Bedrock (lithic)	20-40	---	Indurated	None	Hig
Rock outcrop, mudflow breccia.						
822:						
Bonepile gravelly medial loam	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Hig
823:						
Bonepile gravelly medial loam	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Hig
824:						
Beecee very gravelly medial loam	---	---	---	---	None	Hig
825:						
Beecee very gravelly medial loam	---	---	---	---	None	Hig
Lydon very gravelly medial coarse sandy loam	Bedrock (lithic)	20-40	---	Indurated	None	Hig
826:						
Redbone gravelly medial sandy loam	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Hig

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
827:						
Redbone gravelly medial sandy loam----	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Hig
829:						
Paradiso loam----------	---	---	---	---	None	Mod
830:						
Paradiso loam----------	---	---	---	---	None	Mod
831:						
Surnuf gravelly loam----------	---	---	---	---	None	Hig
Bigridge loam----------	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
Spine very gravelly loam----------	Bedrock (lithic)	10-20	---	Indurated	None	Mod
832:						
Surnuf gravelly loam----------	---	---	---	---	None	Hig
Bigridge loam----------	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
Spine very gravelly loam----------	Bedrock (lithic)	10-20	---	Indurated	None	Mod
833:						
Surnuf gravelly loam----------	---	---	---	---	None	Hig
Bigridge loam----------	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
Spine very gravelly loam----------	Bedrock (lithic)	10-20	---	Indurated	None	Mod
834:						
Hietanen gravelly loam----------	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Mod
Mac gravelly loam----------	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Mod
835:						
Hietanen gravelly loam----------	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Mod
Mac gravelly loam----------	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Mod

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
836:						
Hietanen gravelly loam	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Mod
Mac gravelly loam	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Mod
Spine very gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Mod
837:						
Hietanen gravelly loam	Bedrock (paralithic)	40-60	---	Very weakly cemented	None	Mod
Spine very gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Mod
Mac gravelly loam	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Mod
838:						
Dixmine very gravelly loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Hig
Spine very gravelly loam	Bedrock (lithic)	10-20	---	Indurated	None	Mod
Mac gravelly loam	Bedrock (paralithic)	20-40	---	Weakly cemented	None	Mod
839:						
Chawanakee gravelly sandy loam	Bedrock (paralithic)	10-20	---	Extremely weakly cemented	None	Low
Billscabin gravelly sandy loam	Bedrock (paralithic)	60-82	---	Moderately cemented	None	Mod
841:						
Billscabin gravelly sandy loam	Bedrock (paralithic)	60-82	---	Moderately cemented	None	Mod
Bonneyridge sandy loam	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Mod
842:						
Billscabin gravelly sandy loam	Bedrock (paralithic)	60-82	---	Moderately cemented	None	Mod

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
842:						
Bonneyridge sandy loam	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Mod
846:						
Bonneyridge sandy loam	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Mod
Lewisflat loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Low
847:						
Bonneyridge sandy loam	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Mod
Lewisflat loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Low
848:						
Bonneyridge sandy loam	Bedrock (paralithic)	60-130	---	Weakly cemented	None	Mod
Lewisflat loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Low
850:						
Lewisflat loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Low
851:						
Lewisflat loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Low
852:						
Lewisflat loam	Bedrock (paralithic)	60-130	---	Moderately cemented	None	Low
860:						
Toadtown gravelly loam	---	---	---	---	None	Mod
Powellton silt loam	---	---	---	---	None	Mod
861:						
Toadtown gravelly loam	---	---	---	---	None	Mod
Powellton silt loam	---	---	---	---	None	Mod

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
862:						
Toadtown gravelly loam	---	---	---	---	None	Mod
Powellton silt loam	---	---	---	---	None	Mod
863:						
Toadtown gravelly loam	---	---	---	---	None	Mod
Powellton silt loam	---	---	---	---	None	Mod
880:						
Sites taxadjunct gravelly loam	---	---	---	---	None	Hig
Jocal taxadjunct gravelly loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Hig
881:						
Sites taxadjunct gravelly loam	---	---	---	---	None	Hig
Jocal taxadjunct gravelly loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Hig
882:						
Sites taxadjunct gravelly loam	---	---	---	---	None	Hig
Jocal taxadjunct gravelly loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Hig
883:						
Sites taxadjunct gravelly loam	---	---	---	---	None	Hig
Jocal taxadjunct gravelly loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Hig
885:						
Rogerville silt loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
886:						
Rogerville silt loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
892:						
Rogerville silt loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
893:						
Rogerville silt loam	Bedrock (paralithic)	40-60	---	Moderately cemented	None	Low
902:						
Lava flows, Lovejoy basalt.						
Lumpkin gravelly medial sandy loam	Bedrock (lithic)	10-20	---	Indurated	None	Hig
903:						
Mudwash gravelly medial sandy loam	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Hig
Timberisland very gravelly medial sandy loam	Bedrock (lithic)	40-60	---	Indurated	None	Hig
Lavatop gravelly medial fine sandy loam	Bedrock (lithic)	20-40	---	Indurated	None	Hig
904:						
Lava flows, Lovejoy basalt.						
Lavatop gravelly medial fine sandy loam	Bedrock (lithic)	20-40	---	Indurated	None	Hig
905:						
Lava flows, Lovejoy basalt.						
Lumpkin gravelly medial sandy loam	Bedrock (lithic)	10-20	---	Indurated	None	Hig
906:						
Lava flows, Lovejoy basalt.						
Lumpkin gravelly medial sandy loam	Bedrock (lithic)	10-20	---	Indurated	None	Hig
911:						
Endoaquolls loam	---	---	---	---	None	Hig
923:						
Powderhouse medial sandy loam	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	Hig
McNair medial coarse sandy loam	Bedrock (paralithic)	40-60	---	Moderately cemented	Low	Hig

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
923:						
Greenwell medial sandy loam----------	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	Hig
924:						
Powderhouse medial sandy loam---------	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	Hig
McNair medial coarse sandy loam-------	Bedrock (paralithic)	40-60	---	Moderately cemented	Low	Hig
Greenwell medial sandy loam----------	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	Hig
925:						
Powderhouse medial sandy loam---------	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	Hig
McNair medial coarse sandy loam-------	Bedrock (paralithic)	40-60	---	Moderately cemented	Low	Hig
Greenwell medial sandy loam----------	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	Hig
930:						
Shakeridge gravelly medial coarse sandy loam----------	Bedrock (lithic)	60-100	---	Indurated	None	Hig
Timberisland very gravelly medial sandy loam----------	Bedrock (lithic)	40-60	---	Indurated	None	Hig
931:						
Shakeridge gravelly medial coarse sandy loam----------	Bedrock (lithic)	60-100	---	Indurated	None	Hig
Mudwash gravelly medial sandy loam----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Hig
Timberisland very gravelly medial sandy loam----------	Bedrock (lithic)	40-60	---	Indurated	None	Hig
932:						
Shakeridge gravelly medial coarse sandy loam----------	Bedrock (lithic)	60-100	---	Indurated	None	Hig

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
932:						
Mudwash gravelly medial sandy loam----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Hig
933:						
Shakeridge gravelly medial coarse sandy loam----------	Bedrock (lithic)	60-100	---	Indurated	None	Hig
934:						
Mudwash gravelly medial sandy loam----	Bedrock (paralithic)	60-80	---	Moderately cemented	None	Hig
939:						
Fluvaquentic Humaquepts very fine sandy loam----------	---	---	---	---	None	Mod
940:						
Dejonah gravelly loam----------	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	Mod
Stagpoint loam----------	Bedrock (paralithic)	60-100	---	Moderately cemented	Low	Mod
941:						
Dejonah gravelly loam----------	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	Mod
Stagpoint loam----------	Bedrock (paralithic)	60-100	---	Moderately cemented	Low	Mod
942:						
Stagpoint loam----------	Bedrock (paralithic)	60-100	---	Moderately cemented	Low	Mod
Dejonah gravelly loam----------	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	Mod
948:						
Stagpoint loam----------	Bedrock (paralithic)	60-100	---	Moderately cemented	Low	Mod
Dejonah gravelly loam----------	Bedrock (paralithic)	60-80	---	Moderately cemented	Low	Mod

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	U
	Kind	Depth to top	Thickness	Hardness		
		In	In			
949:						
Rogerville taxadjunct fine sandy loam	Bedrock (paralithic)	40-60	---	Moderately cemented	Low	Hig
950:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam----------	Bedrock (lithic)	5-10	---	Indurated	Low	Mod
Rock outcrop, olivine basalt, andesite, or mudflow.						
Powderhouse medial sandy loam---------	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	Hig
951:						
Lumpkin taxadjunct very gravelly medial very fine sandy loam----------	Bedrock (lithic)	5-10	---	Indurated	Low	Mod
Rock outcrop, andesite.						
Powderhouse medial sandy loam---------	Bedrock (paralithic)	20-40	---	Moderately cemented	Low	Hig
960:						
Surnuf gravelly loam, high elevation--	---	---	---	---	None	Mod
961:						
Surnuf gravelly loam, high elevation--	---	---	---	---	None	Mod
962:						
Surnuf gravelly loam, high elevation--	---	---	---	---	None	Mod
963:						
Surnuf gravelly loam, high elevation--	---	---	---	---	None	Mod
990.						
Riverwash, frequently flooded						
991:						
Xerofluvents sandy loam, frequently flooded----------	---	---	---	---	None	Hig
995.						
Pits, gravel						

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	
	Kind	Depth to top	Thickness	Hardness		
		In	In			
996. Dumps, excavated material						
997. Pits						
998. Dumps, landfill						
999. Water						
DAM. Dam, manmade						

Table 26.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
Almendra	Fine-loamy, mixed, superactive, thermic Pachic Haploxerolls
Anita	Clayey, smectitic, thermic, shallow Xeric Duraquerts
*Anita taxadjunct	Clayey, smectitic, thermic, shallow Vertic Endoaquepts
Aquic Xerofluvents	Coarse-loamy, mixed, active, nonacid Aquic Xerofluvents
Arbuckle	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
*Argonaut taxadjunct	Fine, mixed, superactive, thermic Ultic Haploxeralfs
Auburn	Loamy, mixed, superactive, thermic Lithic Haploxerepts
Beatsonhollow	Loamy-skeletal, mixed, superactive, thermic Lithic Haplohumults
*Beatsonhollow taxadjunct	Loamy, mixed, superactive, thermic Lithic Haplohumults
Beecee	Medial-skeletal, mixed, mesic Typic Haploxerands
Bigridge	Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
Billscabin	Loamy-skeletal, isotic, mesic Typic Dystroxerepts
Blavo	Very-fine, smectitic, thermic Xeric Duraquerts
Boga	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
Bonepile	Medial-skeletal, glassy, frigid Typic Haploxerands
*Bonepile taxadjunct	Loamy-skeletal, isotic, mesic Ultic Haploxerands
Bonneyridge	Coarse-loamy, isotic, mesic Typic Dystroxerepts
Bosquejo	Fine, smectitic, thermic Typic Haploxererts
*Bosquejo taxadjunct	Fine, smectitic, thermic Chromic Haploxererts
Bottlehill	Loamy-skeletal, mixed, active, mesic Xeric Haplohumults
Boxrobber	Loamy-skeletal, mixed, active, mesic, shallow Ultic Haploxeralfs
Busacca	Fine, mixed, superactive, thermic Pachic Haploxerolls
Butteside	Fine, mixed, superactive, thermic Typic Haploxeralfs
Calcic Haploxerolls	Mixed, superactive, thermic Calcic Haploxerolls
Campbellhills	Loamy-skeletal, mixed, superactive, thermic Ultic Argixerolls
Carhart	Fine, smectitic, thermic Xeric Endoaquerts
*Carhart taxadjunct	Clayey, smectitic, thermic, shallow Xeric Endoaquerts
Cerpone	Fine-loamy, parasesquic, mesic Ultic Haploxeralfs
Charger	Coarse-loamy, mixed, superactive, thermic Typic Haploxerolls
Chawanakee	Loamy, mixed, active, mesic, shallow Typic Dystroxerepts
Cherokeespring	Fine-loamy, mixed, superactive, thermic Ultic Palexeralfs
Cherotable	Fine-loamy, parasesquic, thermic Ultic Haploxeralfs
Chico	Fine-loamy, mixed, superactive, thermic Pachic Argixerolls
Chinacamp	Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs
Clear Lake	Fine, smectitic, thermic Xeric Endoaquerts
Clearhayes	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
Coalcanyon	Loamy-skeletal, parasesquic, thermic Pachic Ultic Argixerolls
*Coalcanyon taxadjunct	Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs
Codora	Fine, mixed, superactive, thermic Fluventic Haploxerepts
Columbia	Coarse-loamy, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents
*Columbia taxadjunct	Coarse-loamy, mixed, superactive, nonacid, thermic Aeric Fluvaquents
Conejo	Fine-loamy, mixed, superactive, thermic Pachic Haploxerolls
Coonhollow	Loamy-skeletal, parasesquic, thermic Pachic Ultic Argixerolls
Coridge	Loamy-skeletal, mixed, superactive, thermic Ultic Haploxeralfs
Craigsaddle	Fine-loamy, mixed, active, thermic Ultic Haploxeralfs
Crystalhill	Coarse-loamy, mixed, active, thermic Typic Haploxerepts
Dejonah	Fine-loamy, mixed, active, frigid Andic Haplohumults
Dixmine	Clayey-skeletal, parasesquic, mesic Typic Haploxerults
Dodgeland	Fine, smectitic, thermic Xeric Endoaquerts
Doemill	Loamy, mixed, superactive, thermic Lithic Haploxeralfs
Dunstone	Loamy, mixed, superactive, thermic, shallow Ultic Haploxeralfs
Duraquerts	Fine, smectitic, thermic Xeric Duraquerts
Duric Xerarents	Thermic Duric Xerarents
Durixeralfs	Clayey-skeletal, smectitic, thermic, shallow Haplic Durixeralfs
Durixeralfs	Fine-loamy, mixed, superactive, thermic Typic Durixeralfs
Durixeralfs	Loamy-skeletal, mixed, superactive, thermic, shallow Typic Durixeralfs
Durixerolls	Fine-loamy, mixed, superactive, thermic Durixerolls
Dystroxerepts	Loamy-skeletal, mixed, active, thermic Typic Dystroxerepts
Earlal	Loamy-skeletal, magnesic, mesic Lithic Haploxeralfs
Eastbiggs	Fine, mixed, active, thermic Abruptic Durixeralfs

Table 26.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Edjobe	Fine, smectitic, thermic Xeric Epiaquerts
Elsey	Fine-loamy, mixed, superactive, thermic Oxyaquic Haplohumults
Endoaquolls	Endoaquolls
Esquon	Fine, smectitic, thermic Xeric Epiaquerts
Fallager	Clayey, mixed, superactive, thermic, shallow Typic Durixeralfs
Farwell	Fine-loamy, mixed, superactive, thermic Fluventic Haploxerepts
Featherfalls	Fine-loamy, mixed, active, mesic Ultic Palexeralfs
Fernandez	Fine-loamy, mixed, active, thermic Ultic Palexeralfs
Flagcanyon	Loamy-skeletal, mixed, superactive, thermic Haplic Durixeralfs
*Flagcanyon taxadjunct	Fine-loamy, mixed, superactive, thermic Haplic Durixeralfs
Flanly	Fine-loamy, mixed, active, thermic Ultic Haploxeralfs
Flumewall	Loamy-skeletal, isotic, mesic Lithic Haploxerults
Fluvaquentic Humaquepts	Fine-loamy, mixed, superactive, mesic Fluvaquentic Humaquepts
Fluvaquents, loamy	Mesic Fluvaquents
Galt	Fine, smectitic, thermic Aquic Durixererts
*Galt taxadjunct	Fine-loamy, mixed, superactive, thermic Typic Durixerepts
Gianella	Coarse-loamy, mixed, superactive, nonacid, thermic Typic Xerofluvents
Govstanford	Coarse-loamy over clayey, mixed over smectitic, superactive, nonacid, thermic Oxyaquic Xerofluvents
Greenwell	Medial, amorphic, frigid Humic Haploxerands
Gridley	Fine, smectitic, thermic Typic Argixerolls
*Gridley taxadjunct	Fine, smectitic, thermic Typic Durixerolls
Griffgulch	Clayey-skeletal, mixed, active, mesic Ultic Haploxeralfs
Hamslough	Clayey-skeletal, smectitic, thermic Typic Petraquepts
Haplic Palexeralfs	Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs
Haploxeralfs	Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs
Haploxeralfs, terrace	Haploxeralfs
Haploxerands	Haploxerands
Haploxerands, granitic till	Frigid Typic Haploxerands
Haploxerands, volcanic till	Frigid Haploxerands
Haploxererts	Fine, smectitic, thermic Haploxererts
Haploxerolls	Fine-loamy, mixed, superactive, thermic Haploxerolls
Hartsmill	Loamy-skeletal, mixed, superactive, thermic Ultic Palexeralfs
Hietanen	Fine-loamy, mixed, active, mesic Typic Haploxerults
Hoda	Fine, kaolinitic, mesic Ultic Haploxeralfs
Holillipah	Sandy, mixed, thermic Typic Xerofluvents
Holland	Fine-loamy, mixed, semiactive, mesic Ultic Haploxeralfs
Hotaw	Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
Hurleton	Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs
Ignord	Coarse-loamy, mixed, superactive, thermic Pachic Haploxerolls
Igo	Loamy, mixed, superactive, thermic, shallow Typic Durixeralfs
Islandbar	Coarse-loamy, mixed, active, mesic Typic Dystroxerepts
Jocal	Fine-loamy, mixed, active, mesic Typic Haploxerults
*Jocal taxadjunct	Fine-loamy, mixed, semiactive, mesic Andic Haploxerults
Jokerst	Loamy, mixed, superactive, thermic Lithic Haploxeralfs
Katskillhill	Fine, mixed, superactive, thermic Ultic Palexeralfs
Kimball	Fine, mixed, active, thermic Mollic Palexeralfs
Kusalslough	Fine, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents
Lavatop	Medial-skeletal, amorphic, mesic Humic Haploxerands
Lewisflat	Fine-loamy, mixed, semiactive, mesic Andic Haploxerults
Lithic Xerorthents	Loamy, mixed, active, nonacid, mesic Lithic Xerorthents
Liveoak	Fine-loamy, mixed, superactive, thermic Typic Haploxerolls
*Liveoak taxadjunct	Fine-loamy, mixed, superactive, thermic Typic Calcixerepts
Llanoseco	Fine, smectitic, thermic Chromic Haploxererts
Loafercreek	Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
Loemstone	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
Lofgren	Very-fine, smectitic, thermic Xeric Epiaquerts
Logtrain	Loamy-skeletal, mixed, active, mesic Typic Haploxerults
Lomarica	Clayey-skeletal, mixed, superactive, thermic Ultic Haploxeralfs
Lucksev	Clayey, mixed, superactive, thermic, shallow Typic Haploxeralfs
Lumpkin	Medial-skeletal, amorphic, mesic Lithic Haploxerands
*Lumpkin taxadjunct	Medial-skeletal, amorphic, frigid Lithic Haploxerands
Lydon	Loamy-skeletal, isotic, mesic Andic Dystroxerepts

Table 26.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Mac	Fine-loamy, mixed, active, mesic Typic Haploxerults
Marcum	Fine, smectitic, thermic Typic Argixerolls
*Mariposa taxadjunct	Fine-loamy, parasesquic, mesic Typic Haploxerults
McNair	Medial-skeletal, amorphic, frigid Humic Haploxerands
Mildred	Fine, mixed, active, mesic Ultic Haploxeralfs
Millerridge	Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
Minniecreek	Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
*Moda taxadjunct	Fine, mixed, active, thermic Abruptic Durixeralfs
Mounthope	Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
Mountyana	Fine-loamy, isotic, mesic Andic Haplohumults
Mudwash	Medial over loamy, mixed over isotic, mesic Alfic Humic Haploxerands
Munjar	Loamy-skeletal, mixed, superactive, thermic Typic Durixeralfs
Neerdobe	Fine, smectitic, thermic Xeric Duraquerts
Obskel	Loamy-skeletal, isotic, mesic Andic Haploxerults
Obstruction	Fine-loamy, isotic, mesic Andic Haploxerults
Olashes	Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs
Ordferry	Fine, smectitic, thermic Xeric Duraquerts
Oregongulch	Coarse-loamy, mixed, active, thermic Typic Haploxerepts
Oroshore	Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs
Oroville	Fine, mixed, active, thermic Aquic Durixeralfs
Oxyaquic Xerofluvents	Coarse-loamy, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents
Oxyaquic Xerofluvents	Fine, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents
Oxyaquic Xerofluvents	Fine-loamy, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents
Palexerults	Kaolinitic, superactive, thermic Typic Palexerults
Paradiso	Fine, mixed, semiactive, mesic Andic Haploxeralfs
Parkshill	Fine-loamy, mixed, active, thermic Ultic Palexeralfs
Parrott	Fine-silty, mixed, superactive, thermic Fluventic Haploxerepts
Perkins	Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs
Powderhouse	Medial-skeletal, glassy, frigid Humic Haploxerands
Powellton	Fine-loamy, parasesquic, mesic Andic Haplohumults
Rackerby	Loamy-skeletal, mixed, active, thermic, shallow Typic Haploxerepts
Redbone	Medial over loamy-skeletal, amorphic over isotic, mesic Ultic Haploxerands
Redding	Fine, mixed, active, thermic Abruptic Durixeralfs
Redsluff	Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs
*Redsluff taxadjunct	Fine, mixed, superactive, thermic Typic Haploxeralfs
Redswale	Loamy-skeletal, mixed, superactive, thermic, shallow Typic Durixeralfs
Redtough	Loamy, mixed, superactive, thermic, shallow Typic Durixeralfs
Retsongulch	Loamy-skeletal, isotic, mesic Typic Haploxerults
Rockstripe	Loamy-skeletal, mixed, active, nonacid, mesic Lithic Xerorthents
Rogerville	Fine, mixed, mesic Xeric Kanhaplohumults
*Rogerville taxadjunct	Fine-loamy, mixed, subactive, frigid Andic Haplohumults
Schott	Loamy-skeletal, mixed, semiactive, mesic Andic Haploxeralfs
Shakeridge	Medial-skeletal, ferrihydritic, mesic Humic Haploxerands
Sites	Fine, parasesquic, mesic Xeric Haplohumults
*Sites taxadjunct	Fine, parasesquic, mesic Andic Palehumults
Slideland	Fine-loamy, mixed, superactive, thermic Haplic Palexeralfs
Sobrante	Fine-loamy, mixed, active, thermic Mollic Haploxeralfs
Sommeyflat	Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
Spine	Loamy-skeletal, mixed, active, mesic Lithic Haploxerults
*Spine taxadjunct	Loamy-skeletal, mixed, active, mesic Lithic Haploxeralfs
Stagpoint	Loamy-skeletal, mixed, active, frigid Andic Haplohumults
*Subaco taxadjunct	Fine, smectitic, thermic Aquic Durixererts
Sunnyslope	Loamy-skeletal, mixed, superactive, thermic, shallow Ultic Haploxeralfs
Surnuf	Fine, parasesquic, mesic Ultic Palexeralfs
*Surnuf taxadjunct	Fine, parasesquic, mesic Ultic Haploxeralfs
Swedesflat	Loamy, mixed, active, thermic, shallow Ultic Haploxeralfs
Thermalito	Fine-loamy, mixed, active, thermic Abruptic Durixeralfs
Thermalrocks	Loamy-skeletal, mixed, superactive, thermic Lithic Haplohumults
Thompsonflat	Fine-loamy, mixed, active, thermic Ultic Haploxeralfs
Timberisland	Medial-skeletal, ferrihydritic, mesic Humic Haploxerands
Toadtown	Fine, parasesquic, mesic Andic Haplohumults
Trainer	Fine-loamy, mixed, active, thermic Aquic Haploxerepts
Tuscan	Clayey, mixed, superactive, thermic, shallow Typic Durixeralfs
*Tuscan taxadjunct	Fine, mixed, superactive, thermic Typic Durixeralfs
Tusccoll	Fine-loamy, mixed, semiactive, mesic Andic Palexeralfs
Typic Haploxeralfs	Thermic Typic Haploxeralfs

Table 26.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Typic Haploxeralfs, magnesic	Magnesic, mesic Typic Haploxeralfs
Typic Petraquepts	Clayey, smectitic, thermic, shallow Typic Petraquepts
Typic Xerofluvents	Coarse-loamy, mixed, superactive, nonacid, thermic Typic Xerofluvents
Typic Xerofluvents	Sandy-skeletal, mixed, superactive, nonacid, thermic Typic Xerofluvents
Ultic Haploxeralfs	Mesic Ultic Haploxeralfs
Ultic Haploxeralfs, conglomerate	Thermic Ultic Haploxeralfs
Ultic Haploxeralfs, mesic	Mesic Ultic Haploxeralfs
Ultic Haploxeralfs, sandstone	Thermic Ultic Haploxeralfs
Ultic Haploxeralfs, sandstone, low elevation	Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
Ultic Haploxeralfs, thermic	Loamy-skeletal, mixed, superactive, thermic Ultic Haploxeralfs
Ultic Haploxeralfs, thermic, high terrace	Thermic Ultic Haploxeralfs
Vermet	Fine-silty, mixed, superactive, thermic Aquic Haploxerepts
Vina	Coarse-loamy, mixed, superactive, thermic Pachic Haploxerolls
Vistarobles	Clayey, mixed, active, thermic, shallow Abruptic Durixeralfs
Wafap	Clayey-skeletal, mixed, superactive, thermic Oxyaquic Argixerolls
Walkermine	Loamy-skeletal, mixed, active, mesic Lithic Dystroxerepts
Whitecabin	Fine, smectitic, thermic Aquic Haploxererts
Wickscorner	Fine-loamy, mixed, superactive, thermic Ultic Palexeralfs
Wilsoncreek	Fine-silty, mixed, superactive, thermic Cumulic Haploxerolls
Woodleaf	Clayey-skeletal, magnesic, mesic Ultic Haploxeralfs
Xerofluvents	Typic Xerofluvents
Xerorthents, shallow	Thermic Xerorthents
Xerorthents, tailings	Thermic Xerorthents

Table 27.--Classification by Order, Suborder, Great Group, and Subgroup

(This table shows the taxonomic units in the survey are arranged by order, suborder, great group, and subgroup. An asterisk indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Order: Alfisols
 Suborder: Xeralfs
  Great Group: Durixeralfs
   Subgroup: Typic Durixeralfs

 Fallager----------Clayey, mixed, superactive, thermic, shallow Typic Durixeralfs
 Tuscan----------Clayey, mixed, superactive, thermic, shallow Typic Durixeralfs
*Tuscan taxadjunct----------Fine, mixed, superactive, thermic Typic Durixeralfs
 Durixeralfs----------Fine-loamy, mixed, superactive, thermic Typic Durixeralfs
 Igo----------Loamy, mixed, superactive, thermic, shallow Typic Durixeralfs
 Redtough----------Loamy, mixed, superactive, thermic, shallow Typic Durixeralfs
 Munjar----------Loamy-skeletal, mixed, superactive, thermic Typic Durixeralfs
 Durixeralfs----------Loamy-skeletal, mixed, superactive, thermic, shallow Typic Durixeralfs
 Redswale----------Loamy-skeletal, mixed, superactive, thermic, shallow Typic Durixeralfs

   Subgroup: Abruptic Durixeralfs

 Vistarobles----------Clayey, mixed, active, thermic, shallow Abruptic Durixeralfs
 Eastbiggs----------Fine, mixed, active, thermic Abruptic Durixeralfs
*Moda taxadjunct----------Fine, mixed, active, thermic Abruptic Durixeralfs
 Redding----------Fine, mixed, active, thermic Abruptic Durixeralfs
 Thermalito----------Fine-loamy, mixed, active, thermic Abruptic Durixeralfs

   Subgroup: Aquic Durixeralfs

 Oroville----------Fine, mixed, active, thermic Aquic Durixeralfs

   Subgroup: Haplic Durixeralfs

 Durixeralfs----------Clayey-skeletal, smectitic, thermic, shallow Haplic Durixeralfs
*Flagcanyon taxadjunct----------Fine-loamy, mixed, superactive, thermic Haplic Durixeralfs
 Flagcanyon----------Loamy-skeletal, mixed, superactive, thermic Haplic Durixeralfs

  Great Group: Haploxeralfs

 Haploxeralfs, terrace---------Haploxeralfs

   Subgroup: Typic Haploxeralfs

 Lucksev----------Clayey, mixed, superactive, thermic, shallow Typic Haploxeralfs
 Butteside----------Fine, mixed, superactive, thermic Typic Haploxeralfs
*Redsluff taxadjunct----------Fine, mixed, superactive, thermic Typic Haploxeralfs
 Arbuckle----------Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
 Boga----------Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
 Clearhayes----------Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
 Loemstone----------Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
 Typic Haploxeralfs, Magnesic--Magnesic, mesic Typic Haploxeralfs
 Typic Haploxeralfs----------Thermic Typic Haploxeralfs

   Subgroup: Andic Haploxeralfs

 Paradiso----------Fine, mixed, semiactive, mesic Andic Haploxeralfs
 Schott----------Loamy-skeletal, mixed, semiactive, mesic Andic Haploxeralfs

   Subgroup: Lithic Haploxeralfs

 Doemill----------Loamy, mixed, superactive, thermic Lithic Haploxeralfs
 Jokerst----------Loamy, mixed, superactive, thermic Lithic Haploxeralfs
 Earlal----------Loamy-skeletal, magnesic, mesic Lithic Haploxeralfs
*Spine taxadjunct----------Loamy-skeletal, mixed, active, mesic Lithic Haploxeralfs

Table 27.--Classification by Order, Suborder, Great Group, and Subgroup--Continued

Subgroup: Mollic Haploxeralfs

Sobrante----------Fine-loamy, mixed, active, thermic Mollic Haploxeralfs
Olashes----------Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs
Perkins----------Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs
Redsluff----------Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs

Subgroup: Ultic Haploxeralfs

Woodleaf----------Clayey-skeletal, magnesic, mesic Ultic Haploxeralfs
Griffgulch----------Clayey-skeletal, mixed, active, mesic Ultic Haploxeralfs
Lomarica----------Clayey-skeletal, mixed, superactive, thermic Ultic Haploxeralfs
Hoda----------Fine, kaolinitic, mesic Ultic Haploxeralfs
Mildred----------Fine, mixed, active, mesic Ultic Haploxeralfs
*Argonaut taxadjunct----------Fine, mixed, superactive, thermic Ultic Haploxeralfs
*Surnuf taxadjunct----------Fine, parasesquic, mesic Ultic Haploxeralfs
Bigridge----------Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
Hotaw----------Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
Millerridge----------Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
Minniecreek----------Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
Craigsaddle----------Fine-loamy, mixed, active, thermic Ultic Haploxeralfs
Flanly----------Fine-loamy, mixed, active, thermic Ultic Haploxeralfs
Thompsonflat----------Fine-loamy, mixed, active, thermic Ultic Haploxeralfs
Holland----------Fine-loamy, mixed, semiactive, mesic Ultic Haploxeralfs
Loafercreek----------Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
Mounthope----------Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
Sommeyflat----------Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
Ultic Haploxeralfs, sandstone,
low elevation----------Fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs
Cerpone----------Fine-loamy, parasesquic, mesic Ultic Haploxeralfs
Cherotable----------Fine-loamy, parasesquic, thermic Ultic Haploxeralfs
Swedesflat----------Loamy, mixed, active, thermic, shallow Ultic Haploxeralfs
Dunstone----------Loamy, mixed, superactive, thermic, shallow Ultic Haploxeralfs
Boxrobber----------Loamy-skeletal, mixed, active, mesic, shallow Ultic Haploxeralfs
Haploxeralfs----------Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs
Hurleton----------Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs
Oroshore----------Loamy-skeletal, mixed, active, thermic Ultic Haploxeralfs
Coridge----------Loamy-skeletal, mixed, superactive, thermic Ultic Haploxeralfs
Ultic Haploxeralfs, thermic---Loamy-skeletal, mixed, superactive, thermic Ultic Haploxeralfs
Sunnyslope----------Loamy-skeletal, mixed, superactive, thermic, shallow Ultic Haploxeralfs
Ultic Haploxeralfs----------Mesic Ultic Haploxeralfs
Ultic Haploxeralfs, mesic-----Mesic Ultic Haploxeralfs
Ultic Haploxeralfs,
conglomerate----------Thermic Ultic Haploxeralfs
Ultic Haploxeralfs, sandstone Thermic Ultic Haploxeralfs
Ultic Haploxeralfs, thermic,
high terrace----------Thermic Ultic Haploxeralfs

Subgroup: Haplic Palexeralfs

Slideland----------Fine-loamy, mixed, superactive, thermic Haplic Palexeralfs

Great Group: Palexeralfs

Subgroup: Andic Palexeralfs

Tusccoll----------Fine-loamy, mixed, semiactive, mesic Andic Palexeralfs

Subgroup: Haplic Palexeralfs

Chinacamp----------Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs
*Coalcanyon taxadjunct---------Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs
Haplic Palexeralfs----------Loamy-skeletal, mixed, superactive, thermic Haplic Palexeralfs

Subgroup: Mollic Palexeralfs

Kimball----------Fine, mixed, active, thermic Mollic Palexeralfs

Table 27.--Classification by Order, Suborder, Great Group, and Subgroup--Continued

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   Subgroup: Ultic Palexeralfs

 Katskillhill------------------Fine, mixed, superactive, thermic Ultic Palexeralfs
 Surnuf------------------------Fine, parasesquic, mesic Ultic Palexeralfs
 Featherfalls------------------Fine-loamy, mixed, active, mesic Ultic Palexeralfs
 Fernandez---------------------Fine-loamy, mixed, active, thermic Ultic Palexeralfs
 Parkshill---------------------Fine-loamy, mixed, active, thermic Ultic Palexeralfs
 Cherokeespring----------------Fine-loamy, mixed, superactive, thermic Ultic Palexeralfs
 Wickscorner-------------------Fine-loamy, mixed, superactive, thermic Ultic Palexeralfs
 Hartsmill---------------------Loamy-skeletal, mixed, superactive, thermic Ultic Palexeralfs

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Order: Andisols
 Suborder: Xerands
  Great Group: Haploxerands

 Haploxerands, volcanic till---Frigid Haploxerands
 Haploxerands------------------Haploxerands

   Subgroup: Typic Haploxerands

 Haploxerands, granitic till---Frigid Typic Haploxerands
 Bonepile----------------------Medial-skeletal, glassy, frigid Typic Haploxerands
 Beecee------------------------Medial-skeletal, mixed, mesic Typic Haploxerands

   Subgroup: Alfic Humic Haploxerands

 Mudwash-----------------------Medial over loamy, mixed over isotic, mesic Alfic Humic Haploxerands

   Subgroup: Humic Haploxerands

 Greenwell---------------------Medial, amorphic, frigid Humic Haploxerands
 Mcnair------------------------Medial-skeletal, amorphic, frigid Humic Haploxerands
 Lavatop-----------------------Medial-skeletal, amorphic, mesic Humic Haploxerands
 Shakeridge--------------------Medial-skeletal, ferrihydritic, mesic Humic Haploxerands
 Timberisland------------------Medial-skeletal, ferrihydritic, mesic Humic Haploxerands
 Powderhouse-------------------Medial-skeletal, glassy, frigid Humic Haploxerands

   Subgroup: Lithic Haploxerands

*Lumpkin taxadjunct------------Medial-skeletal, amorphic, frigid Lithic Haploxerands
 Lumpkin-----------------------Medial-skeletal, amorphic, mesic Lithic Haploxerands

   Subgroup: Ultic Haploxerands

*Bonepile taxadjunct-----------Loamy-skeletal, isotic, mesic Ultic Haploxerands
 Redbone-----------------------Medial over loamy-skeletal, amorphic over isotic, mesic Ultic Haploxerands

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Order: Entisols
 Suborder: Aquents
  Great Group: Fluvaquents

 Fluvaquents, loamy------------Mesic Fluvaquents

   Subgroup: Aeric Fluvaquents

*Columbia taxadjunct-----------Coarse-loamy, mixed, superactive, nonacid, thermic Aeric Fluvaquents

 Suborder: Arents
  Great Group: Xerarents
   Subgroup: Duric Xerarents

 Duric Xerarents---------------Thermic Duric Xerarents
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Table 27.--Classification by Order, Suborder, Great Group, and Subgroup--Continued

Suborder: Fluvents
Great Group: Xerofluvents
Subgroup: Typic Xerofluvents

Gianella----------Coarse-loamy, mixed, superactive, nonacid, thermic Typic Xerofluvents
Typic Xerofluvents----------Coarse-loamy, mixed, superactive, nonacid, thermic Typic Xerofluvents
Holillipah----------Sandy, mixed, thermic Typic Xerofluvents
Typic Xerofluvents----------Sandy-skeletal, mixed, superactive, nonacid, thermic Typic Xerofluvents
Xerofluvents----------Typic Xerofluvents

Subgroup: Aquic Xerofluvents

Aquic Xerofluvents----------Coarse-loamy, mixed, active, nonacid Aquic Xerofluvents

Subgroup: Oxyaquic Xerofluvents

Govstanford----------Coarse-loamy over clayey, mixed over smectitic, superactive, nonacid, thermic Oxyaquic Xerofluvents
Columbia----------Coarse-loamy, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents
Oxyaquic Xerofluvents---------Coarse-loamy, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents
Kusalslough----------Fine, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents
Oxyaquic Xerofluvents---------Fine, mixed, superactive, nonacid, thermic Oxyaquic Xerofluvents

Suborder: Orthents
Great Group: Xerorthents

Xerorthents, shallow----------Thermic Xerorthents
Xerorthents, tailings---------Thermic Xerorthents

Subgroup: Lithic Xerorthents

Lithic Xerorthents----------Loamy, mixed, active, nonacid, mesic Lithic Xerorthents
Rockstripe----------Loamy-skeletal, mixed, active, nonacid, mesic Lithic Xerorthents

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Order: Inceptisols
Suborder: Aquepts
Great Group: Humaquepts
Subgroup: Fluvaquentic Humaquepts

Fluvaquentic Humaquepts-------Fine-loamy, mixed, superactive, mesic Fluvaquentic Humaquepts

Great Group: Endoaquepts
Subgroup: Vertic Endoaquepts

*Anita taxadjunct----------Clayey, smectitic, thermic, shallow Vertic Endoaquepts

Great Group: Petraquepts
Subgroup: Typic Petraquepts

Typic Petraquepts----------Clayey, smectitic, thermic, shallow Typic Petraquepts
Hamslough----------Clayey-skeletal, smectitic, thermic Typic Petraquepts

Suborder: Xerepts
Great Group: Calcixerepts
Subgroup: Typic Calcixerepts

*Liveoak taxadjunct----------Fine-loamy, mixed, superactive, thermic Typic Calcixerepts

Great Group: Durixerepts
Subgroup: Typic Durixerepts

*Galt taxadjunct----------Fine-loamy, mixed, superactive, thermic Typic Durixerepts

Great Group: Dystroxerepts
Subgroup: Lithic Dystroxerepts

Walkermine----------Loamy-skeletal, mixed, active, mesic Lithic Dystroxerepts

Table 27.--Classification by Order, Suborder, Great Group, and Subgroup--Continued

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  Subgroup: Andic Dystroxerepts

 Lydon-------------------------Loamy-skeletal, isotic, mesic Andic Dystroxerepts

  Subgroup: Typic Dystroxerepts

 Bonneyridge-------------------Coarse-loamy, isotic, mesic Typic Dystroxerepts
 Islandbar---------------------Coarse-loamy, mixed, active, mesic Typic Dystroxerepts
 Chawanakee--------------------Loamy, mixed, active, mesic, shallow Typic Dystroxerepts
 Billscabin--------------------Loamy-skeletal, isotic, mesic Typic Dystroxerepts
 Dystroxerepts-----------------Loamy-skeletal, mixed, active, thermic Typic Dystroxerepts

  Great Group: Haploxerepts
   Subgroup: Lithic Haploxerepts

 Auburn------------------------Loamy, mixed, superactive, thermic Lithic Haploxerepts

  Subgroup: Aquic Haploxerepts

 Trainer-----------------------Fine-loamy, mixed, active, thermic Aquic Haploxerepts
 Vermet------------------------Fine-silty, mixed, superactive, thermic Aquic Haploxerepts

  Subgroup: Fluventic Haploxerepts

 Codora------------------------Fine, mixed, superactive, thermic Fluventic Haploxerepts
 Farwell-----------------------Fine-loamy, mixed, superactive, thermic Fluventic Haploxerepts
 Parrott-----------------------Fine-silty, mixed, superactive, thermic Fluventic Haploxerepts

  Subgroup: Typic Haploxerepts

 Crystalhill-------------------Coarse-loamy, mixed, active, thermic Typic Haploxerepts
 Oregongulch-------------------Coarse-loamy, mixed, active, thermic Typic Haploxerepts
 Rackerby----------------------Loamy-skeletal, mixed, active, thermic, shallow Typic Haploxerepts

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Order: Mollisols
 Suborder: Aquolls
  Great Group: Endoaquolls

 Endoaquolls-------------------Endoaquolls

 Suborder: Xerolls
  Great Group: Argixerolls
   Subgroup: Typic Argixerolls

 Gridley-----------------------Fine, smectitic, thermic Typic Argixerolls
 Marcum------------------------Fine, smectitic, thermic Typic Argixerolls

  Subgroup: Oxyaquic Argixerolls

 Wafap-------------------------Clayey-skeletal, mixed, superactive, thermic Oxyaquic Argixerolls

  Subgroup: Pachic Ultic Argixerolls

 Coalcanyon--------------------Loamy-skeletal, parasesquic, thermic Pachic Ultic Argixerolls
 Coonhollow--------------------Loamy-skeletal, parasesquic, thermic Pachic Ultic Argixerolls

  Subgroup: Pachic Argixerolls

 Chico-------------------------Fine-loamy, mixed, superactive, thermic Pachic Argixerolls

  Subgroup: Ultic Argixerolls

 Campbellhills-----------------Loamy-skeletal, mixed, superactive, thermic Ultic Argixerolls
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Table 27.--Classification by Order, Suborder, Great Group, and Subgroup--Continued

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  Great Group: Durixerolls

 Durixerolls-------------------Fine-loamy, mixed, superactive, thermic Durixerolls

   Subgroup: Typic Durixerolls

*Gridley taxadjunct------------Fine, smectitic, thermic Typic Durixerolls

  Great Group: Haploxerolls

 Haploxerolls------------------Fine-loamy, mixed, superactive, thermic Haploxerolls

   Subgroup: Typic Haploxerolls

 Charger-----------------------Coarse-loamy, mixed, superactive, thermic Typic Haploxerolls
 Liveoak-----------------------Fine-loamy, mixed, superactive, thermic Typic Haploxerolls

   Subgroup: Calcic Haploxerolls

 Calcic Haploxerolls-----------Mixed, superactive, thermic Calcic Haploxerolls

   Subgroup: Cumulic Haploxerolls

 Wilsoncreek-------------------Fine-silty, mixed, superactive, thermic Cumulic Haploxerolls

   Subgroup: Pachic Haploxerolls

 Ignord------------------------Coarse-loamy, mixed, superactive, thermic Pachic Haploxerolls
 Vina--------------------------Coarse-loamy, mixed, superactive, thermic Pachic Haploxerolls
 Busacca-----------------------Fine, mixed, superactive, thermic Pachic Haploxerolls
 Almendra----------------------Fine-loamy, mixed, superactive, thermic Pachic Haploxerolls
 Conejo------------------------Fine-loamy, mixed, superactive, thermic Pachic Haploxerolls

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Order: Ultisols
 Suborder: Humults
  Great Group: Haplohumults
   Subgroup: Andic Haplohumults

 Toadtown----------------------Fine, parasesquic, mesic Andic Haplohumults
 Mountyana---------------------Fine-loamy, isotic, mesic Andic Haplohumults
 Dejonah-----------------------Fine-loamy, mixed, active, frigid Andic Haplohumults
*Rogerville taxadjunct---------Fine-loamy, mixed, subactive, frigid Andic Haplohumults
 Powellton---------------------Fine-loamy, parasesquic, mesic Andic Haplohumults
 Stagpoint---------------------Loamy-skeletal, mixed, active, frigid Andic Haplohumults

   Subgroup: Lithic Haplohumults

*Beatsonhollow taxadjunct------Loamy, mixed, superactive, thermic Lithic Haplohumults
 Thermalrocks------------------Loamy-skeletal, mixed, superactive, thermic Lithic Haplohumults

   Subgroup: Xeric Haplohumults

 Sites-------------------------Fine, parasesquic, mesic Xeric Haplohumults
 Bottlehill--------------------Loamy-skeletal, mixed, active, mesic Xeric Haplohumults

   Subgroup: Oxyaquic Haplohumults

 Elsey-------------------------Fine-loamy, mixed, superactive, thermic Oxyaquic Haplohumults

  Great Group: Kanhaplohumults
   Subgroup: Xeric Kanhaplohumults

 Rogerville--------------------Fine, mixed, mesic Xeric Kanhaplohumults
```

Table 27.--Classification by Order, Suborder, Great Group, and Subgroup--Continued

```
  Great Group: Palehumults
   Subgroup: Andic Palehumults

*Sites taxadjunct--------------Fine, parasesquic, mesic Andic Palehumults

 Suborder: Xerults
  Great Group: Haplohumults
   Subgroup: Lithic Haplohumults

 Beatsonhollow-----------------Loamy-skeletal, mixed, superactive, thermic Lithic Haplohumults

  Great Group: Haploxerults
   Subgroup: Typic Haploxerults

 Dixmine-----------------------Clayey-skeletal, parasesquic, mesic Typic Haploxerults
 Hietanen----------------------Fine-loamy, mixed, active, mesic Typic Haploxerults
 Jocal-------------------------Fine-loamy, mixed, active, mesic Typic Haploxerults
 Mac---------------------------Fine-loamy, mixed, active, mesic Typic Haploxerults
*Mariposa taxadjunct-----------Fine-loamy, parasesquic, mesic Typic Haploxerults
 Retsongulch-------------------Loamy-skeletal, isotic, mesic Typic Haploxerults
 Logtrain----------------------Loamy-skeletal, mixed, active, mesic Typic Haploxerults

   Subgroup: Andic Haploxerults

 Obstruction-------------------Fine-loamy, isotic, mesic Andic Haploxerults
*Jocal taxadjunct--------------Fine-loamy, mixed, semiactive, mesic Andic Haploxerults
 Lewisflat---------------------Fine-loamy, mixed, semiactive, mesic Andic Haploxerults
 Obskel------------------------Loamy-skeletal, isotic, mesic Andic Haploxerults

   Subgroup: Lithic Haploxerults

 Flumewall---------------------Loamy-skeletal, isotic, mesic Lithic Haploxerults
 Spine-------------------------Loamy-skeletal, mixed, active, mesic Lithic Haploxerults

  Great Group: Palexerults
   Subgroup: Typic Palexerults

 Palexerults-------------------Kaolinitic, superactive, thermic Typic Palexerults

-------------------------------------------------------------------------------

Order: Vertisols
 Suborder: Xererts
  Great Group: Durixererts
   Subgroup: Aquic Durixererts

 Galt--------------------------Fine, smectitic, thermic Aquic Durixererts
*Subaco taxadjunct-------------Fine, smectitic, thermic Aquic Durixererts

  Great Group: Haploxererts

 Haploxererts------------------Fine, smectitic, thermic Haploxererts

   Subgroup: Typic Haploxererts

 Bosquejo----------------------Fine, smectitic, thermic Typic Haploxererts

   Subgroup: Aquic Haploxererts

 Whitecabin--------------------Fine, smectitic, thermic Aquic Haploxererts

   Subgroup: Chromic Haploxererts

*Bosquejo taxadjunct-----------Fine, smectitic, thermic Chromic Haploxererts
 Llanoseco---------------------Fine, smectitic, thermic Chromic Haploxererts
```

Table 27.--Classification by Order, Suborder, Great Group, and Subgroup--Continued

```
 Suborder: Aquerts
  Great Group: Duraquerts
   Subgroup: Xeric Duraquerts

 Anita------------------------Clayey, smectitic, thermic, shallow Xeric Duraquerts
 Duraquerts-------------------Fine, smectitic, thermic Xeric Duraquerts
 Neerdobe---------------------Fine, smectitic, thermic Xeric Duraquerts
 Ordferry---------------------Fine, smectitic, thermic Xeric Duraquerts
 Blavo------------------------Very-fine, smectitic, thermic Xeric Duraquerts

  Great Group: Endoaquerts
   Subgroup: Xeric Endoaquerts

*Carhart taxadjunct-----------Clayey, smectitic, thermic, shallow Xeric Endoaquerts
 Carhart----------------------Fine, smectitic, thermic Xeric Endoaquerts
 Clear Lake-------------------Fine, smectitic, thermic Xeric Endoaquerts
 Dodgeland--------------------Fine, smectitic, thermic Xeric Endoaquerts

  Great Group: Epiaquerts
   Subgroup: Xeric Epiaquerts

 Edjobe-----------------------Fine, smectitic, thermic Xeric Epiaquerts
 Esquon-----------------------Fine, smectitic, thermic Xeric Epiaquerts
 Lofgren----------------------Very-fine, smectitic, thermic Xeric Epiaquerts
```

Appendices

Appendix A—Wildlife Habitat: Vegetation, Agriculture, Wetlands, and Miscellaneous Landscape Features

Prepared by Joseph G. Silveira, Wildlife Biologist, U.S. Fish and Wildlife Service, Sacramento National Wildlife Refuge Complex, Willows, California.

Habitat from Mayer and Laudenslayer (1988), except where indicated by an asterisk (*). Numbers in brackets refer to the general soil map units in this survey area.

Vegetation

Valley & Foothill Riparian [1, 2, 8, 9, 15, canyon bottoms]
Valley Oak Woodland [1, 2, 8, 12], savanna [11, 12]
Fresh Emergent Wetland [1, 2, 3, 4, 6]
Annual Grassland [10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22]
Blue Oak Woodland [14, 16, 19, 23]; savanna [17, 18, 22]
Blue Oak–Foothill Pine [18, 20, 21, 23]
Chamise–Redshank Chaparral [18]; limited to the Cohasset Ridge
Mixed Chaparral with scattered blue oak, foothill pine, and interior live oak [18, 20, 21, 23, 24, 26]; with scattered ponderosa pine and incense cedar [24]
* Mixed Chaparral with patches of Annual Grassland (on shallow soils) [25]
Montane Hardwood–Conifer [26]
Ponderosa Pine [27, 30, 34]
Sierran Mixed Conifer [27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39]
* Ultramafic Vegetation—blue oak (some areas in Butte County), foothill pine, Jeffery pine, and McNab cypress (near Magalia) and mixed chaparral in areas of ultramafic geology [30]
Montane Chaparral [39]; limited by fire
Montane Riparian [34]; inclusions
Wet Meadow [34, 38, 39]; inclusions

Agriculture

Pasture [3, 6, 8, 9, 11]
Cropland—rice [3, 4, 6, 12]; row crops [1, 5, 7, 9]; hay [9]
Orchard–Vineyard—walnuts [1, 2, 7, 8, 9, 11]; almonds [1, 2, 7, 8, 9]; prunes [1, 2, 5, 11, 12]; peaches, nectarines, and kiwis [11]; olives and citrus [12]

Wetlands

Riverine—perennial and intermittent streams and rivers [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39]

Lacustrine—permanently flooded lakes and reservoirs and intermittent lakes and ponds, including vernal pools [1, 3, 4, 6, 8 10, 12, 13, 14, 17, 20, 24, 27, 30]

Miscellaneous Landscape Features

Cut banks, sand and gravel bars, and mudflats [1, 2, 11, 13, 14]
Volcanic mudflow rock outcrops [10, 15, 16, 17 18, 25, 37]
Lava flows and basalt outcrops [14, 35]
Metavolcanic rock outcrops [19, 20, 21, 22, 26, 27, 28, 29, 30, 31, 32, 38]
Diorite, gabbro, and quartz diorite rock outcrops [23, 24, 33, 34]
Ultramafic rock outcrops [30, 31]
Large andesite boulders on the surface [36]
Andesite mudflows [37]

Appendix B—Wildlife Habitat: Relationship of Landforms and Soils to Vegetation, Agriculture, and Miscellaneous Landscape Features

Prepared by Joseph G. Silveira, Wildlife Biologist, U.S. Fish and Wildlife Service, Sacramento National Wildlife Refuge Complex, Willows, California.

Habitat from Mayer and Laudenslayer (1988), except where indicated by an asterisk (*). Numbers in brackets refer to the general soil map units in this survey area.

Valley

Flood Plains Along the Sacramento and Feather Rivers

THERMIC SOILS ON FLOOD PLAINS IN THE SACRAMENTO VALLEY

Alluvial deposits—Sacramento River active meander belt and alluvial deposits [1]; Feather River terrace and fan alluvial deposits [2]

[1] Parrott–Gianella–Farwell
[2] Xerorthents, Tailings–Gianella

Valley & Foothill Riparian [1, 2]
Valley Oak Woodland [1, 2]
Fresh Emergent Wetland [1, 2]
Pasture [1, 2]
Riverine [1, 2]
Lacustrine, i.e., oxbow lakes [1]
Cropland—row crops [1]
Orchard–Vineyard–-walnuts, almonds, prunes [1, 2]
Miscellaneous features—cut banks, sand and gravel bars, mudflats [1, 2]

Northeast Sacramento Valley Flood Basins

THERMIC SOILS IN FLOOD BASINS IN THE SACRAMENTO VALLEY

Basin deposits [3, 4, 5, 6]

[3] Lofgren–Blavo
[4] Esquon–Neerdobe
[5] Bosquejo–Galt
[6] Gridley Taxadjunct–Subaco Taxadjunct

Fresh Emergent Wetland [3, 4, 6]
Pasture [3, 6]
Riverine [3, 4, 5, 6]
Lacustrine, i.e., duck ponds [3, 4, 6]
Cropland—rice [3, 4, 6]; row crops [5]
Orchard–Vineyard—prunes [5]
Miscellaneous features—mudflats

Northeast Sacramento Valley Alluvial Fans

THERMIC SOILS ON ALLUVIAL FANS IN THE SACRAMENTO VALLEY

Modesto Formation [7, 8, 9]

[7] Olashes
[8] Conejo–Almendra–Vina
[9] Haploxerolls–Durixerolls

Valley & Foothill Riparian [8, 9]
Valley Oak Woodland [8]
Pasture [8, 9]
Riverine [7, 8, 9]
Lacustrine, i.e., Teichert Pond [8]
Cropland—row crops [7, 9]; hay [9]
Orchard–Vineyard—almonds, walnuts [7, 8, 9]

Southern Cascade and Northern Sierra Nevada Fan Terraces

THERMIC SOILS THAT FORMED IN CASCADE ALLUVIUM; ON FAN TERRACES IN THE SACRAMENTO VALLEY

Red Bluff Formation [10]

[10] Redsluff–Redtough–Redswale

Annual Grassland [10]
Riverine [10]
Lacustrine, i.e., vernal pools [10]

THERMIC SOILS THAT FORMED IN SIERRA NEVADA ALLUVIUM; ON LOW FAN TERRACES IN THE SACRAMENTO VALLEY

River Bank Formation [12]

[12] Eastbiggs–Duric Xerarents–Kimball

Valley Oak Woodland [12]; savanna on Kimball soils
Annual Grassland [12]
Riverine [12]
Lacustrine, i.e., vernal pools [12]
Cropland—rice [12] on Eastbiggs soils and on Duric Xerarents
Orchard–Vineyard—olives, citrus, prunes [12] on Kimball soils

THERMIC SOILS THAT FORMED IN SIERRA NEVADA ALLUVIUM; ON INTERMEDIATE AND HIGH FAN TERRACES IN THE SACRAMENTO VALLEY

Laguna Formation [13]

[13] Thompsonflat–Oroville–Vistarobles

Annual Grassland [13]
Riverine [13]
Lacustrine, i.e., vernal pools [13]
Miscellaneous features—cut bank along the Feather River at Highway 70

Feather River Terraces

THERMIC SOILS ON FEATHER RIVER TERRACES IN THE SACRAMENTO VALLEY

Modesto Formation (Modesto-Riverbank Formation) [11]

[11] Liveoak–Boga–Loemstone

Valley Oak Woodland—savanna [11]
Annual Grassland
Pasture [11]
Orchard–Vineyard—peaches, nectarines, walnuts, kiwis [11]
Miscellaneous features—cut banks

Foothills

Northern Sierra Nevada and Southern Cascade Foothills

THERMIC SOILS ON LOVEJOY BASALT AND IONE SEDIMENTS ON SIERRA NEVADA FOOTHILLS

Lovejoy basalt and limited Ione sediments) [14]

[14] Palexerults–Rock Outcrop, Basalt–Coalcanyon

Blue Oak Woodland [14]
Annual Grassland [14]
Riverine [14]
Lacustrine, i.e., vernal pools [14]
Miscellaneous features—lava flows, basalt rock outcrops

THERMIC SOILS ON STRATH TERRACES ON VOLCANIC CASCADE FOOTHILLS

Low Tuscan Formation (strath terraces) [15]

[15] Tuscan–Clearhayes–Typic Xerofluvents

Valley Foothill Riparian Forest [15] on Xerofluvents
Annual Grassland [15]
Riverine [15]

THERMIC SOILS ON VOLCANIC CASCADE FOOTHILLS

Low Tuscan Formation—sandstone [16]; mudflow [17]; sandstone and mudflow [18]

[16] Lucksev–Butteside–Carhart
[17] Doemill–Jokerst
[18] Xerorthents, Shallow–Typic Haploxeralfs–Doemill

Ridgetops—annual grasses, scattered blue oak
Canyons: northwest slopes—chaparral; southeast slopes—grasses, blue oak
Savanna—widely spaced trees and/or shrubs

Annual Grassland [16, 17, 18]
Blue Oak Woodland—[16] at the higher elevations, [17] savanna, [18] savanna
Blue Oak–Foothill Pine [18]
Chamise–Redshank Chaparral [18]; limited to the Cohasset Ridge
Mixed Chaparral with scattered blue oak, foothill pine, and interior live oak [18]; limited
Riverine [16, 17, 18]
Lacustrine, i.e., vernal pools [17]
Miscellaneous features—volcanic mudflow rock outcrops

THERMIC SOILS ON METAMORPHIC SIERRA NEVADA FOOTHILLS

Smartville Formation (metavolcanic rock) [19; 20; 21; 22]

[19] Dunstone–Loafercreek–Argonaut Taxadjunct
[20] Dunstone–Loafercreek–Oroshore
[21] Mounthope-Hartsmill
[22] Ultic Haploxeralfs, Thermic, High Terrace

Ridgetops—annual grasses, scattered blue oak
Canyons: northwest slopes—chaparral; southeast slopes—grasses, blue oak

Savanna—widely spaced trees and/or shrubs

Annual Grassland [19, 20, 22]
Blue Oak Woodland—[19] savanna, [22] savanna with scattered shrubs
Blue Oak–Foothill Pine [20, 21]
Mixed Chaparral with scattered blue oak, foothill pine, and interior live oak [20, 21]
Riverine [19, 20, 21, 22]
Lacustrine [20]
Miscellaneous features—metavolcanic rock outcrops

THERMIC SOILS ON PLUTONS ON SIERRA NEVADA FOOTHILLS

Swedesflat Pluton and Bald Rock Pluton (diorite, gabbro, gabbro-diorite rocks) [23]; (quartz diorite) [24]

[23] Flanly–Swedesflat–Parkshill
[24] Crystalhill–Oregongulch–Craigsaddle

Ridgetops—annual grasses, scattered blue oak
Canyons: northwest slopes—chaparral; southeast slopes—grasses, blue oak

Blue Oak–Foothill Pine [23]
Mixed Chaparral with scattered blue oak, foothill pine, and interior live oak [23, 24] and with scattered ponderosa pine and incense cedar [24]
Riverine, i.e., canyon bottoms [23, 24]
Lacustrine [24]
Miscellaneous features—diorite, gabbro, and quartz diorite rock outcrops

MESIC SOILS ON VOLCANIC CASCADE FOOTHILLS

Mid Tuscan Formation (mudflow) [25]

[25] Rockstripe–Ultic Haploxeralfs, Mesic–Ultic Haploxeralfs

The distribution of vegetation is affected by elevation and precipitation.

* Mixed Chaparral with patches of Annual Grassland (on shallow soils) [25]
Valley Foothill Riparian (canyon bottoms)
Riverine, i.e., canyon bottoms [25]
Miscellaneous features—volcanic mudflow rock outcrops

MESIC SOILS ON METAMORPHIC SIERRA NEVADA FOOTHILLS

Smartville Formation (metavolcanic rock) [26]

[26] Bigridge–Minniecreek

Montane Hardwood–Conifer [26]
Mixed Chaparral with scattered blue oak, foothill pine, and interior live oak [26]
Riverine, i.e., canyon bottoms [26]
Miscellaneous features—metavolcanic rock outcrops

Southern Cascade and Northern Sierra Nevada Mountains

MESIC SOILS ON VOLCANIC CASCADE MOUNTAINS

High Tuscan Formation [27, 28, 29]

[27] Paradiso–Schott–Tusccoll
[28] Mountyana–Beecee–Lydon

[29] Redbone

Ponderosa Pine [27]
Sierran Mixed Conifer [27, 28, 29]
Riverine [27, 28, 29]
Lacustrine [27]
Miscellaneous features—volcanic rock outcrops

MESIC SOILS ON METAMORPHIC SIERRA NEVADA MOUNTAINS

Mixed rocks of metasedimentary, metavolcanic, and ultramafic origin [30, 31, 32, 33]

[30] Surnuf–Griffgulch–Typic Haploxeralfs, Magnesic
[31] Toadtown–Powellton–Rogerville
[32] Obstruction–Obskel–Bottlehill

Ponderosa Pine [30]
Sierran Mixed Conifer [30, 31, 32]
* Ultramafic vegetation—blue oak (some areas in Butte County), foothill pine, Jeffery pine, and McNab cypress (near Magalia); mixed chaparral in areas of ultramafic geology [30]
Wet Meadow (inclusions)
Riverine [30, 31, 32]
Lacustrine [30]
Miscellaneous features—metavolcanic and ultramafic rock outcrops

MESIC SOILS ON PLUTONS IN THE SIERRA NEVADA MOUNTAINS

Concow, Bald Rock, Cascade, Lumpkin, and Grizzly Plutons [33, 34]

[33] Islandbar–Featherfalls–Chawanakee
[34] Bonneyridge–Chawanakee–Lewisflat

Sierran Mixed Conifer [34] on Bonneyridge soils
Ponderosa Pine [35] on Islandbar soils
Montane Riparian [34]
Wet Meadow [34]
Riverine [33, 34]
Miscellaneous features—quartz diorite rock outcrops

MESIC SOILS ON VOLCANIC SIERRA NEVADA MOUNTAINS

Lovejoy basalt [35]

[35] Mudwash–Shakeridge–Timberisland

Sierran Mixed Conifer [35]
Riverine [35]
Miscellaneous features—lava flows

FRIGID SOILS ON VOLCANIC CASCADE MOUNTAINS

Andesitic mudflows [36]

[36] Bonepile

Sierran Mixed Conifer [36]; dominated by white fir
Wet Meadow (inclusions)
Riverine [36]
Miscellaneous features—large andesite boulders on the surface

FRIGID SOILS ON VOLCANIC SIERRA NEVADA MOUNTAINS

Andesitic mudflows [37]

[37] Powderhouse–McNair–Greenwell

Sierran Mixed Conifer [37]; dominated by white fir with some red fir
Riverine [37]
Miscellaneous features—andesite mudflows

FRIGID SOILS ON METAMORPHIC SIERRA NEVADA MOUNTAINS

Metavolcanic rocks [38]

[38] Dejonah–Stagpoint

Sierran Mixed Conifer [38]; dominated by white fir with some red fir
Montane Riparian (inclusions)
Wet Meadow [38]
Riverine [38]
Miscellaneous features—metavolcanic rock outcrops

FRIGID SOILS ON MORAINES IN THE SIERRA NEVADA AND CASCADE MOUNTAINS

Glacial till, including part of the Grizzly Pluton [39]

[39] Haploxerands, Volcanic Till–Haploxerands, Granitic Till

Sierran Mixed Conifer [39]; dominated by white fir with some red fir
Montane Chaparral [39]; limited by fire
Wet Meadow [39]
Riverine [39]

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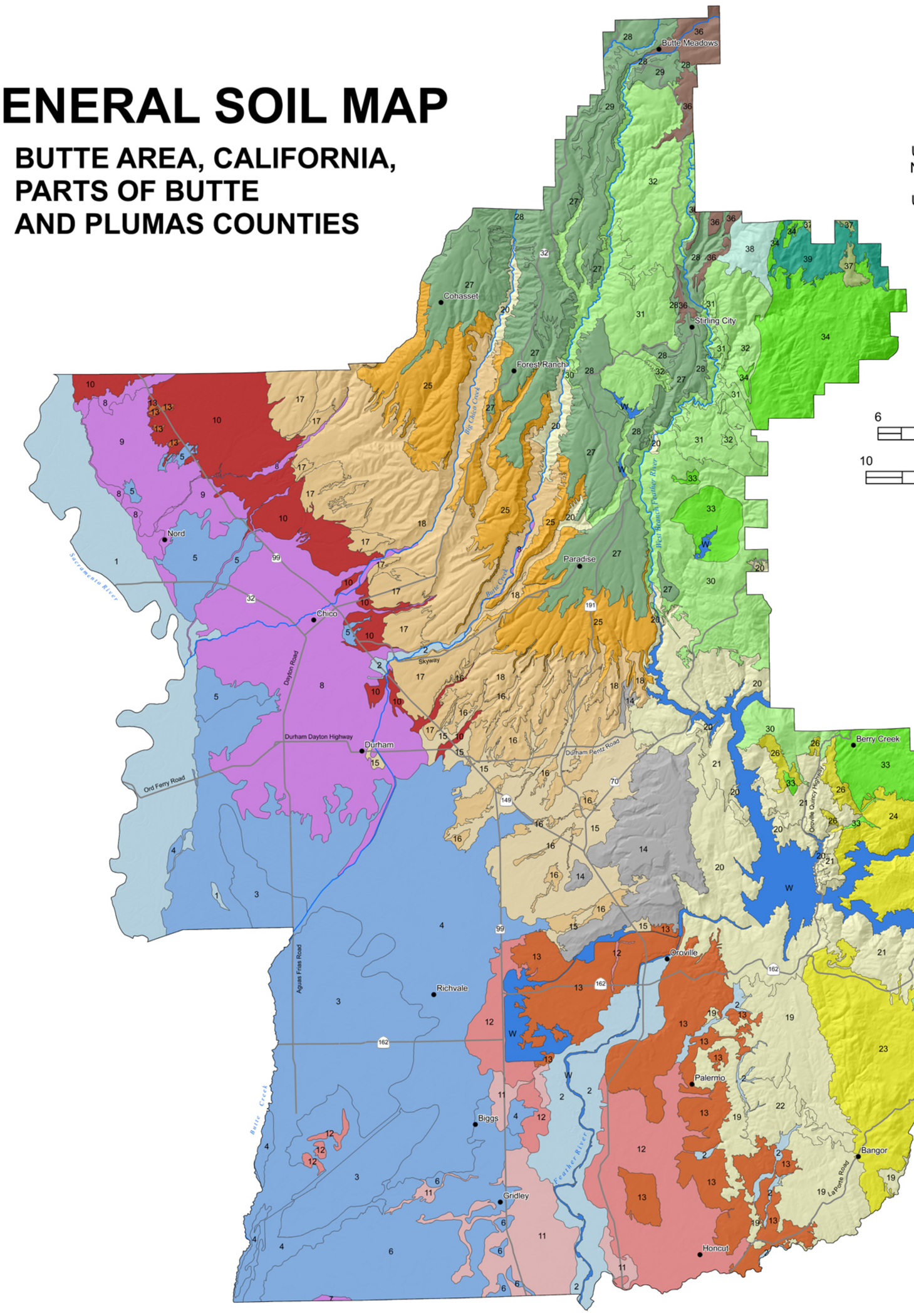
NRCS Natural Resources Conservation Service

GENERAL SOIL MAP

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE AND PLUMAS COUNTIES

UNITED STATES DEPARTMENT OF AGRICULTURE,
NATURAL RESOURCES CONSERVATION SERVICE;
REGENTS OF THE UNIVERSITY OF CALIFORNIA;
UNITED STATES DEPARTMENT OF THE INTERIOR,
FISH AND WILDLIFE SERVICE



LEGEND

THERMIC SOILS ON FLOOD PLAINS IN THE SACRAMENTO VALLEY
- 1 Parrott-Gianella-Farwell
- 2 Xerorthents, Tailings-Gianella

THERMIC SOILS IN FLOOD BASINS IN THE SACRAMENTO VALLEY
- 3 Lofgren-Blavo
- 4 Esquon-Neerdobe
- 5 Bosquejo-Galt
- 6 Gridley Taxadjunct-Subaco Taxadjunct

THERMIC SOILS ON ALLUVIAL FANS IN THE SACRAMENTO VALLEY
- 7 Olashes
- 8 Conejo-Almendra-Vina
- 9 Haploxerolls-Durixerolls

THERMIC SOILS THAT FORMED IN CASCADE ALLUVIUM; ON FAN TERRACES IN THE SACRAMENTO VALLEY
- 10 Redsluff-Redtough-Redswale

THERMIC SOILS ON FEATHER RIVER TERRACES IN THE SACRAMENTO VALLEY
- 11 Liveoak-Boga-Loemstone

THERMIC SOILS THAT FORMED IN SIERRA NEVADA ALLUVIUM; ON LOW FAN TERRACES IN THE SACRAMENTO VALLEY
- 12 Eastbiggs-Duric Xerarents-Kimball

THERMIC SOILS THAT FORMED IN SIERRA NEVADA ALLUVIUM; ON INTERMEDIATE AND HIGH FAN TERRACES IN THE SACRAMENTO VALLEY
- 13 Thompsonflat-Oroville-Vistarobles

THERMIC SOILS ON LOVEJOY BASALT AND IONE SEDIMENTS ON SIERRA NEVADA FOOTHILLS
- 14 Palexerults-Rock Outcrop, Basalt-Coalcanyon

THERMIC SOILS ON STRATH TERRACES ON VOLCANIC CASCADE FOOTHILLS
- 15 Tuscan-Clearhayes-Typic Xerofluvents

THERMIC SOILS ON VOLCANIC CASCADE FOOTHILLS
- 16 Lucksev-Butteside-Carhart
- 17 Doemill-Jokerst
- 18 Xerorthents, Shallow-Typic Haploxeralfs-Doemill

THERMIC SOILS ON METAMORPHIC SIERRA NEVADA FOOTHILLS
- 19 Dunstone-Loafercreek-Argonaut Taxadjunct
- 20 Dunstone-Loafercreek-Oroshore
- 21 Mounthope-Hartsmill
- 22 Ultic Haploxeralfs, Thermic, High Terrace

THERMIC SOILS ON PLUTONS ON SIERRA NEVADA FOOTHILLS
- 23 Flanly-Swedesflat-Parkshill
- 24 Crystalhill-Oregongulch-Craigsaddle

MESIC SOILS ON VOLCANIC CASCADE FOOTHILLS
- 25 Rockstripe-Ultic Haploxeralfs, Mesic-Ultic Haploxeralfs

MESIC SOILS ON METAMORPHIC SIERRA NEVADA FOOTHILLS
- 26 Bigridge-Minniecreek

MESIC SOILS ON VOLCANIC CASCADE MOUNTAINS
- 27 Paradiso-Schott-Tusccoll
- 28 Mountyana-Beecee-Lydon
- 29 Redbone

MESIC SOILS ON METAMORPHIC SIERRA NEVADA MOUNTAINS
- 30 Surnuf-Griffgulch-Typic Haploxeralfs, Magnesic
- 31 Toadtown-Powellton-Rogerville
- 32 Obstruction-Obskel-Bottlehill

MESIC SOILS ON PLUTONS IN THE SIERRA NEVADA MOUNTAINS
- 33 Islandbar-Featherfalls-Chawanakee
- 34 Bonneyridge-Chawanakee-Lewisflat

MESIC SOILS ON VOLCANIC SIERRA NEVADA MOUNTAINS
- 35 Mudwash-Shakeridge-Timberisland

FRIGID SOILS ON VOLCANIC CASCADE MOUNTAINS
- 36 Bonepile

FRIGID SOILS ON VOLCANIC SIERRA NEVADA MOUNTAINS
- 37 Powderhouse-McNair-Greenwell

FRIGID SOILS ON METAMORPHIC SIERRA NEVADA MOUNTAINS
- 38 Dejonah-Stagpoint

FRIGID SOILS ON MORAINES IN THE SIERRA NEVADA AND CASCADE MOUNTAINS
- 39 Haploxerands, Volcanic Till-Haploxerands, Granitic Till

- W Water

INDEX TO MAP SHEETS
BUTTE AREA, CALIFORNIA
PARTS OF BUTTE AND PLUMAS COUNTIES

122°00'00"

121°10'00"

40°00'00"

39°20'00"

DEVILS PARADE GROUND
BUTTE MEADOWS
VINA
RICHARDSON SPRINGS NW
CAMPBELL MOUND
COHASSET
STIRLING CITY
KIMSHEW
STORRIE
FOSTER ISLAND
RICHARDSON SPRINGS
PARADISE WEST
PARADISE EAST
PULGA
DOGWOOD PEAK
ORD FERRY
CHICO
HAMLIN CANYON
CHEROKEE
BERRY CREEK
BRUSH CREEK
CASCADE
AMERICAN HOUSE
LLANO SECO
NELSON
SHIPPEE
OROVILLE
OROVILLE DAM
FORBESTOWN
CARTER MILLS
STRAWBERRY VALLEY
BUTTE CITY
WEST OF BIGGS
BIGGS
PALERMO
WYANDOTTE
RACKERBY
SANBORN SLOUGH
PENINSULA
GRIDLEY
HOKE HILL
LOMA RICA

COUNTY
BUTTE
PLUMAS
GLENN
COLUSA
SUTTER
YUBA

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Butte Meadows
Stirling City
Forest Ranch
Paradise
Chico
Thermalito
Oroville
Palermo
Wyandotte
Biggs
Gridley
Feathers Falls

Mosquito Junction Reservoir
Thermalito Forebay
Thermalito Afterbay
LAKE OROVILLE
Concow Res

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

N

1 0 1 2 3
MILES

1 0 1 2 3 4 5 6
KILOMETERS

SCALE = 1:195000

BOL	NAME
	Tusccoll-Schott complex, 50 to 70 percent slopes
	Bonepile taxadjunct, 2 to 8 percent slopes
	Haploxeralfs, terrace, 0 to 5 percent slopes
	Haploxerands-Aquic Xerofluvents complex, 0 to 15 percent slopes
	Fluvaquents, loamy, 0 to 3 percent slopes
	Obstruction gravelly sandy loam, 3 to 15 percent slopes
	Obskel-Obstruction complex, 15 to 30 percent slopes
	Obskel-Obstruction complex, 30 to 50 percent slopes
	Obskel-Obstruction-Retsongulch complex, 50 to 70 percent slopes
	Bottlehill-Walkermine-Logtrain complex, 3 to 15 percent slopes
	Bottlehill-Walkermine-Logtrain complex, 15 to 30 percent slopes
	Bottlehill-Logtrain-Walkermine complex, 30 to 50 percent slopes
	Bottlehill-Walkermine-Logtrain complex, 50 to 70 percent slopes
	Walkermine-Bottlehill-Logtrain-Rock outcrop complex, 70 to 110 percent slopes
	Dixmine-Mac-Spine complex, 30 to 50 percent slopes
	Powellton-Toadtown complex, 3 to 15 percent slopes
	Powellton-Toadtown complex, 15 to 30 percent slopes
	Powellton-Toadtown complex, 30 to 50 percent slopes
	Mountyana gravelly loam, 2 to 15 percent slopes
	Mountyana gravelly loam, 15 to 30 percent slopes
	Lydon very gravelly medial coarse sandy loam, 2 to 15 percent slopes
	Lydon very gravelly medial coarse sandy loam, 15 to 30 percent slopes
	Lydon-Rock outcrop complex, 30 to 50 percent slopes
	Lydon-Rock outcrop complex, 50 to 70 percent slopes
	Lydon-Rock outcrop complex, 70 to 100 percent slopes
	Bonepile gravelly medial loam, 2 to 15 percent slopes
	Bonepile gravelly medial loam, 15 to 30 percent slopes
	Beecee very gravelly medial loam, 30 to 50 percent slopes
	Beecee-Lydon complex, 50 to 70 percent slopes
	Redbone gravelly medial sandy loam, 3 to 15 percent slopes
	Redbone gravelly medial sandy loam, 15 to 30 percent slopes
	Paradiso loam, 2 to 15 percent slopes
	Paradiso loam, 15 to 30 percent slopes
	Surnuf-Bigridge-Spine complex, 3 to 15 percent slopes
	Surnuf-Bigridge-Spine complex, 15 to 30 percent slopes
	Surnuf-Bigridge-Spine complex, 30 to 50 percent slopes
	Hietanen-Mac complex, 3 to 15 percent slopes
	Hietanen-Mac complex, 15 to 30 percent slopes
	Hietanen-Mac-Spine complex, 30 to 50 percent slopes
	Hietanen-Spine-Mac complex, 50 to 70 percent slopes
	Dixmine-Spine-Mac complex, 50 to 70 percent slopes
	Chawanakee-Billscabin complex, 2 to 15 percent slopes
	Billscabin-Bonneyridge complex, 30 to 50 percent slopes
	Billscabin-Bonneyridge complex, 50 to 70 percent slopes
	Bonneyridge-Lewisflat complex, 2 to 15 percent slopes
	Bonneyridge-Lewisflat complex, 15 to 30 percent slopes
	Bonneyridge-Lewisflat complex, 30 to 50 percent slopes
	Lewisflat loam, 2 to 15 percent slopes
	Lewisflat loam, 15 to 30 percent slopes
	Lewisflat loam, 30 to 50 percent slopes
	Toadtown-Powellton complex, 2 to 15 percent slopes
	Toadtown-Powellton complex, 15 to 30 percent slopes
	Toadtown-Powellton complex, 30 to 50 percent slopes
	Toadtown-Powellton complex, 50 to 70 percent slopes
	Sites-Jocal taxadjuncts, 2 to 15 percent slopes
	Sites-Jocal taxadjuncts, 15 to 30 percent slopes
	Sites-Jocal taxadjuncts, 30 to 50 percent slopes
	Sites-Jocal taxadjuncts, 50 to 70 percent slopes
	Rogerville silt loam, 2 to 15 percent slopes
	Rogerville silt loam, 15 to 30 percent slopes
	Rogerville silt loam, 50 to 70 percent slopes
	Rogerville silt loam, 30 to 50 percent slopes
	Lava flows-Lumpkin complex, 0 to 15 percent slopes
	Mudwash-Timberisland-Lavatop complex, 2 to 30 percent slopes
	Lava flows-Lavatop complex, 15 to 30 percent slopes
	Lava flows-Lumpkin complex, 30 to 50 percent slopes
	Lava flows-Lumpkin complex, 50 to 70 percent slopes
	Endoaquolls, 0 to 8 percent slopes
	Powderhouse-McNair-Greenwell complex, 2 to 15 percent slopes
	Powderhouse-McNair-Greenwell complex, 15 to 30 percent slopes
	Powderhouse-McNair-Greenwell complex, 30 to 50 percent slopes
	Shakeridge-Timberisland complex, 0 to 15 percent slopes
	Shakeridge-Mudwash-Timberisland complex, 15 to 30 percent slopes
	Shakeridge-Mudwash complex, 30 to 50 percent slopes
	Shakeridge gravelly medial coarse sandy loam, 50 to 70 percent slopes
	Mudwash gravelly medial sandy loam, 0 to 15 percent slopes
	Fluvaquentic Humaquepts, 0 to 15 percent slopes
	Dejonah-Stagpoint complex, 2 to 15 percent slopes
	Dejonah-Stagpoint complex, 15 to 30 percent slopes
	Stagpoint-Dejonah complex, 30 to 50 percent slopes
	Stagpoint-Dejonah complex, 50 to 70 percent slopes
	Rogerville taxadjunct, 30 to 50 percent slopes
	Lumpkin taxadjunct-Rock outcrop-Powderhouse complex, 0 to 15 percent slopes
	Lumpkin taxadjunct-Rock outcrop-Powderhouse complex, 15 to 30 percent slopes
	Surnuf gravelly loam, 3 to 8 percent slopes, high elevation
	Surnuf gravelly loam, 8 to 15 percent slopes, high elevation
	Surnuf gravelly loam, 15 to 30 percent slopes, high elevation
	Surnuf gravelly loam, 30 to 50 percent slopes, high elevation
	Riverwash, 0 to 2 percent slopes, frequently flooded
	Xerofluvents, 0 to 4 percent slopes, frequently flooded
	Pits, gravel
	Dumps, excavated material
	Pits
	Dumps, landfill
	Water
	Dam

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

- National, state, or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park)
- Land grant
- Limit of soil survey (label) and/or denied access area
- Field sheet matchline & neatline
- Previously Published Survey

OTHER BOUNDARY (label)

- Airport, airfield
- Cemetery
- City/county park

STATE COORDINATE TICK
1 890 000 FEET

LAND DIVISION CORNER
(section and land grants)

GEOGRAPHIC COORDINATE TICK

TRANSPORTATION

- Divided roads
- Other roads
- Trail

ROAD EMBLEM AND DESIGNATIONS

- Interstate (173, 79, 345)
- Federal (287, 410, 224)
- State (52, 52, 347)
- County, farm or ranch

RAILROAD

POWER TRANSMISSION LINE

PIPELINE

FENCE

LEVEES

- Without road
- With road
- With railroad
- Single side slope (showing actual feature location)

DAMS

- Medium or Small (W)

LANDFORM FEATURES

- Prominent hill or peak
- Soil Sample Site (S)

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house
- Church
- School
- Other Religion (Mt Carmel)
- Located object (Ranger Station)
- Tank (Petroleum)
- Lookout Tower
- Oil and/or Natural Gas Wells
- Windmill
- Lighthouse

HYDROGRAPHIC FEATURES

STREAMS

- Perennial stream, double line
- Perennial stream, single line — Label only
- Intermittent stream — Label only
- Drainage end — Label only

DRAINAGE AND IRRIGATION

- Double-line canal (label) (CANAL)
- Perennial drainage and/or irrigation ditch — Label only
- Intermittent drainage and/or irrigation ditch — Label only

SMALL LAKES, PONDS AND RESERVOIRS

- Perennial water
- Miscellaneous water
- Flood pool line (FLOOD POOL LINE)

MISCELLANEOUS WATER FEATURES

- Spring
- Well, artesian
- Well, irrigation

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS (100, 121)

LANDFORM FEATURES

- Bedrock escarpment
- Other than bedrock escarpment
- Short steep slope
- Gully
- Depression, closed
- Sinkhole

PITS

- Borrow pits
- Gravel pit
- Mine or quarry
- Landfill

MISCELLANEOUS SURFACE FEATURES

- Blowout
- Clay spot
- Gravelly spot
- Lava flow
- Marsh or swamp
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip
- Sodic spot
- Spoil area
- Stony spot
- Very stony spot
- Wet spot

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
DEVILS PARADE GROUND QUADRANGLE
SHEET NUMBER 1 OF 43

121° 45′ 00″ | 121° 42′ 30″ | 121° 40′ 00″ | 121° 37′ 30″

R. 2 E. R. 3 E.

40° 07′ 30″

40° 05′ 00″

T. 26 N.
T. 25 N.

40° 02′ 30″

40° 00′ 00″

Joins sheet 2, Butte Meadows

R. 2 E. R. 3 E.

Joins sheet 6, Cohasset

Joins sheet 5, Campbell Mound

Joins sheet 7, Stirling City

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

DEVILS PARADE GROUND, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 1 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
FOSTER ISLAND QUADRANGLE
SHEET NUMBER 10 OF 43

Joins sheet 4, Richardson Springs NW

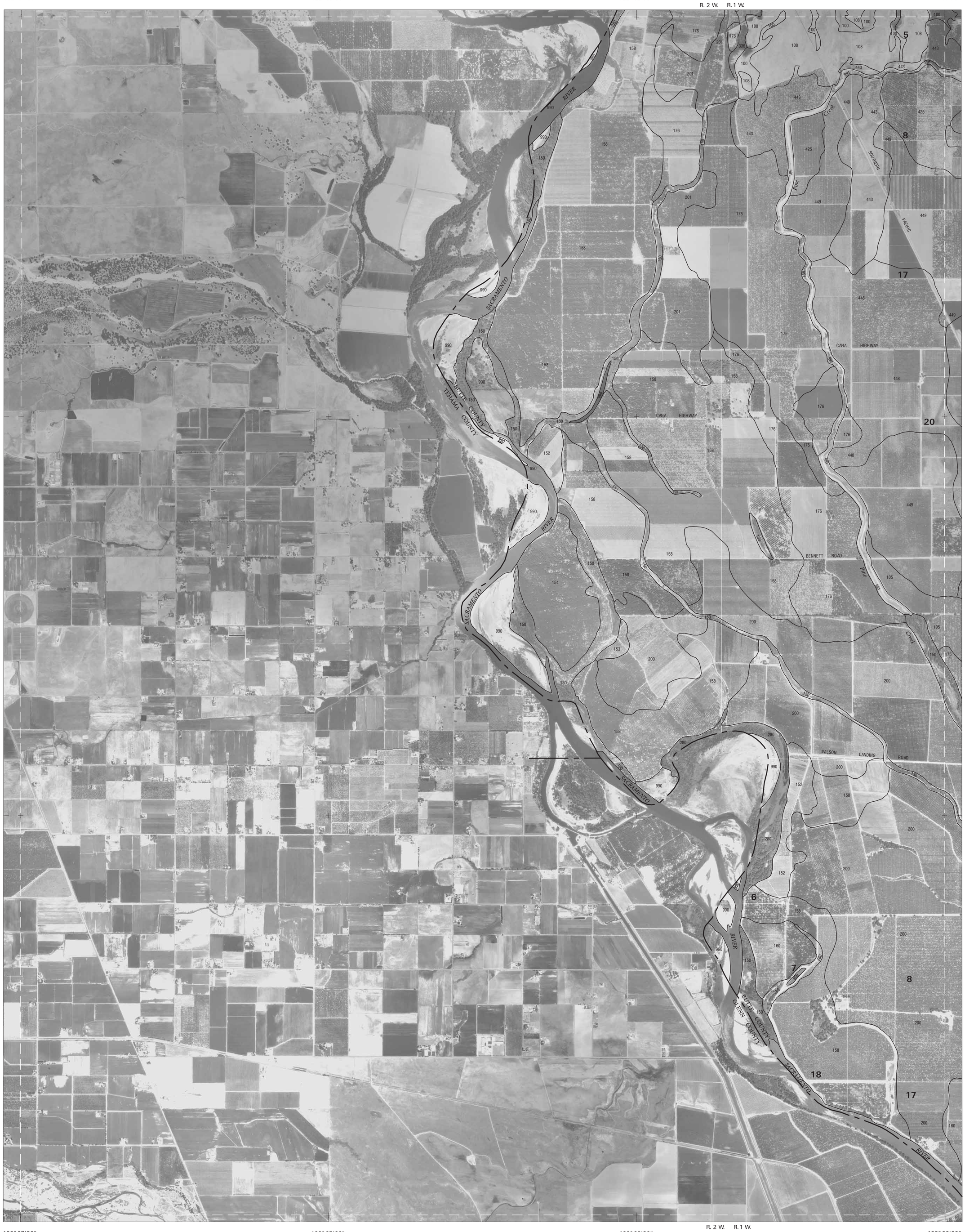
122° 07′ 30″ — 122° 05′ 00″ — 122° 02′ 30″ — 122° 00′ 00″

Joins sheet 3, Vina

R. 2 W. R. 1 W.

39° 52′ 30″ — 39° 50′ 00″ — 39° 47′ 30″ — 39° 45′ 00″

T. 23 N.
T. 22 N.



Joins sheet 11, Nord

Joins sheet 17, Ord ferry

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North American Datum of 1983 (NAD83), GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

FOSTER ISLAND, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 10 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
NORD QUADRANGLE
SHEET NUMBER 11 OF 43

Joins sheet 3, Vina
Joins sheet 4, Richardson Springs NW
Joins sheet 5, Campbell Mound
Joins sheet 10, Foster Island
Joins sheet 12, Richardson Springs
Joins sheet 17, Ord Ferry
Joins sheet 18, Chico

122°00′00″ 121°57′30″ 121°55′00″ 121°52′30″
R. 1 W. R. 1 E.
39°52′30″ 39°50′00″ 39°47′30″ 39°45′00″
T. 23 N. T. 22 N.

Creek Pine BROYLES ROAD Cana HIGHWAY CANA SOUTHERN PACIFIC BENNETT ROAD Rock Creek LANE KEEFER Keefer Slough WILSON LANDING ROAD Nord MERIDIAN Mud Creek Sycamore Creek 205 Flume RIVER ROAD Butte Creek BUTTE GLENN CO MECHOOPDA INDIAN RESERVATION

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

NORD, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 11 OF 43

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF
BUTTE & PLUMAS COUNTIES
RICHARDSON SPRINGS QUADRANGLE
SHEET NUMBER 12 OF 43

121°52′30″ 121°50′00″ 121°47′30″ 121°45′00″

Joins sheet 5, Campbell Mound

R. 1 E. R. 2 E.

39°52′30″ 39°50′00″ 39°47′30″ T. 23 N. T. 22 N. 39°45′00″

Joins sheet 11, Nord

Joins sheet 13, Paradise West

Joins sheet 17, Old Ferry

Joins sheet 18, Chico

Joins sheet 19 Humbug Canyon

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North American Datum of 1983 (NAD83), GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

RICHARDSON SPRINGS, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 12 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
PARADISE WEST QUADRANGLE
SHEET NUMBER 13 OF 43

Joins sheet 5, Campbell Mound

Joins sheet 7, Stirling City

Joins sheet 6, Cohasset

121° 45′ 00″ | 121° 42′ 30″ | 121° 40′ 00″ | 121° 37′ 30″

39° 52′ 30″

39° 50′ 00″

39° 47′ 30″

39° 45′ 00″

R. 2 E. R. 3 E.

T. 23 N.
T. 22 N.

Joins sheet 12, Richardson Springs

Joins sheet 14, Paradise East

Joins sheet 18, Chico

Joins sheet 19, Hamlin Canyon

Joins sheet 20, Cherokee

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

PARADISE WEST, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 13 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
PARADISE EAST QUADRANGLE
SHEET NUMBER 14 OF 43

Joins sheet 6, Cohasset
Joins sheet 7, Stirling City
Joins sheet 8, Kimshew Point
Joins sheet 13, Paradise West
Joins sheet 15, Pulga
Joins sheet 19, Hamlin Canyon
Joins sheet 20, Cherokee
Joins sheet 21, Berry Creek

121°37′30″ 121°35′00″ 121°32′30″ 121°30′00″

R. 3 E. R. 4 E.

39°52′30″ 39°50′00″ 39°47′30″ 39°45′00″

T. 23 N.
T. 22 N.

De Sabla Lake
Coutolenc
Paradise Lake
Paradise Pines
Magalia Reservoir
Sawmill Peak
Concow Reservoir
Jordan Hill
PARADISE
NIMSHEW
SKYWAY
CLARK ROAD
PENTZ ROAD
DURO ROAD
HILL ROAD
Feather River
West Branch Feather River
Fall River
Concow Creek
Little Butte Creek
Butte Creek
Dry Creek
Clear Creek
Empire Creek
Ridge
Middle Ridge
Honey Run
Magalia
Paradise
Pulga

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North American Datum of 1983 (NAD83), GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

PARADISE EAST, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 14 OF 43

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF
BUTTE & PLUMAS COUNTIES
PULGA QUADRANGLE
SHEET NUMBER 15 OF 43

121°30′00″ 121°27′30″ 121°25′00″ 121°22′30″

R. 4 E. R. 5 E.

39°52′30″ 39°50′00″ 39°47′30″ 39°45′00″

Joins sheet 14, Paradise East

T. 23 N.
T. 22 N.

LASSEN NATIONAL FOREST

PLUMAS NATIONAL FOREST

BUTTE COUNTY
PLUMAS COUNTY

LIMIT OF SOIL SURVEY

Flea Valley
Flea Mountain
Rag Dump
Fall Creek
Camp Creek
Lackerman Creek
Cohasset Creek
Curly Creek
Rocky Rim Ridge Road
Barbees Bar Road
N. Fork Feather River
Road

Joins sheet 20, Cherokee

Joins sheet 21, Berry Creek

Joins sheet 22, Butt Creek

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

PULGA, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 15 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF
BUTTE & PLUMAS COUNTIES
DOGWOOD PEAK QUADRANGLE
SHEET NUMBER 16 OF 43

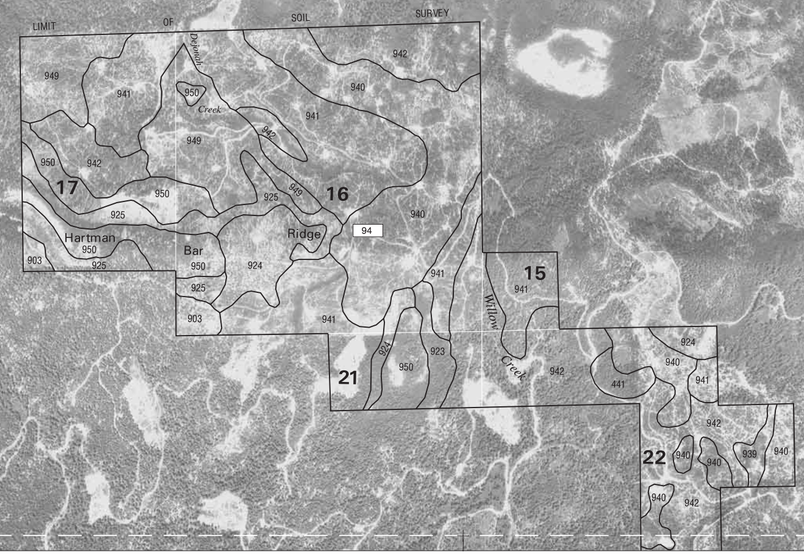
121°07′30″ 121°05′00″ 121°02′30″ 121°00′00″

R. 8 E. R. 9 E.

39°52′30″ 39°50′00″ 39°47′30″ 39°45′00″

T. 23 N.
T. 22 N.

PLUMAS
NATIONAL
FOREST



Joins sheet 23, Cascade

Joins sheet 24, American House

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

DOGWOOD PEAK, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 16 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
ORD FERRY QUADRANGLE
SHEET NUMBER 17 OF 43

Joins sheet 11, Nord

122°00′00″ 121°57′30″ 121°55′00″ 121°52′30″

R. 1 W. R. 1 E.

39°45′00″ 39°42′30″ 39°40′00″ 39°37′30″

T. 22 N.
T. 21 N.

Joins sheet 18, Chico

Joins sheet 25, Llano Seco

Joins sheet 26, Nelson

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

ORD FERRY, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 17 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
CHICO QUADRANGLE
SHEET NUMBER 18 OF 43

Joins sheet 11, Nord

Joins sheet 13, Paradise West

Joins sheet 12, Richardson Springs

121°52′30″ 121°50′00″ 121°47′30″ 121°45′00″

39°45′00″

R. 1 E. R. 2 E.

T. 22 N.
T. 21 N.

39°42′30″

39°40′00″

39°37′30″

Joins sheet 17, Ord Ferry

Joins sheet 19, Hamlin Canyon

Joins sheet 25, Llano Seco

Joins sheet 26, Nelson

Joins sheet 27, Shippee

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

CHICO, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 18 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
HAMLIN CANYON QUADRANGLE
SHEET NUMBER 19 OF 43

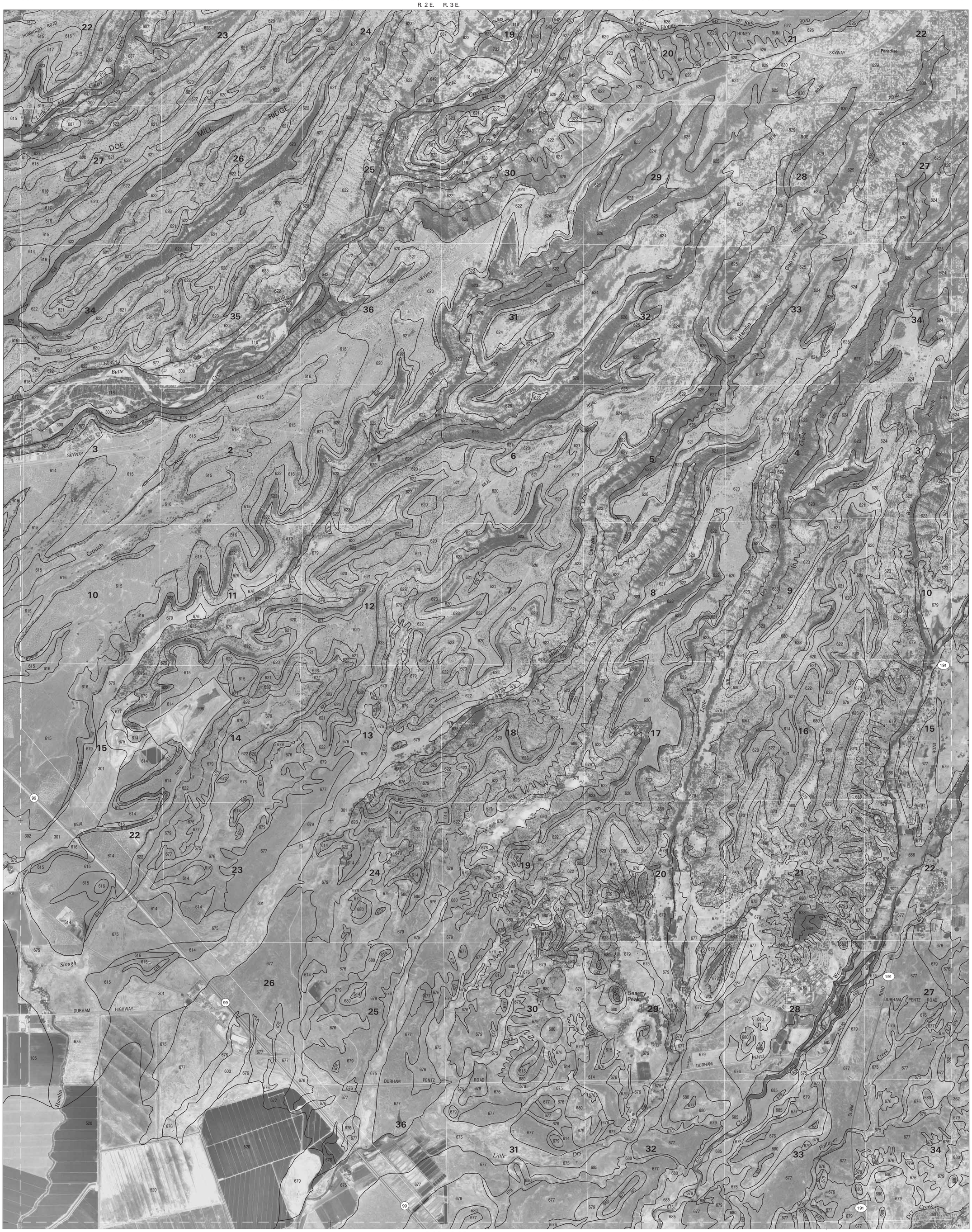
Joins sheet 12, Richardson Springs
Joins sheet 13, Paradise West
Joins sheet 14, Paradise East
Joins sheet 18, Chico
Joins sheet 20, Cherokee
Joins sheet 26, Nelson
Joins sheet 27, Shippee
Joins sheet 28, Oroville

121° 45′ 00″ | 121° 42′ 30″ | 121° 40′ 00″ | 121° 37′ 30″

39° 45′ 00″ | 39° 42′ 30″ | 39° 40′ 00″ | 39° 37′ 30″

R. 2 E. R. 3 E.

T. 22 N.
T. 21 N.



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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

HAMLIN CANYON, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 19 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF
BUTTE & PLUMAS COUNTIES
BUTTE MEADOWS QUADRANGLE
SHEET NUMBER 2 OF 43

121°37′30″ 121°35′00″ 121°32′30″ 121°30′00″

R. 3 E. R. 4 E.

40°07′30″ 40°05′00″ 40°02′30″ 40°00′00″

T. 26 N.
T. 25 N.

Joins sheet 1, Devils Parade Ground

Joins sheet 7, Stirling City

Joins sheet 6, Cohasset

Joins sheet 8, Kirkshew Point

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

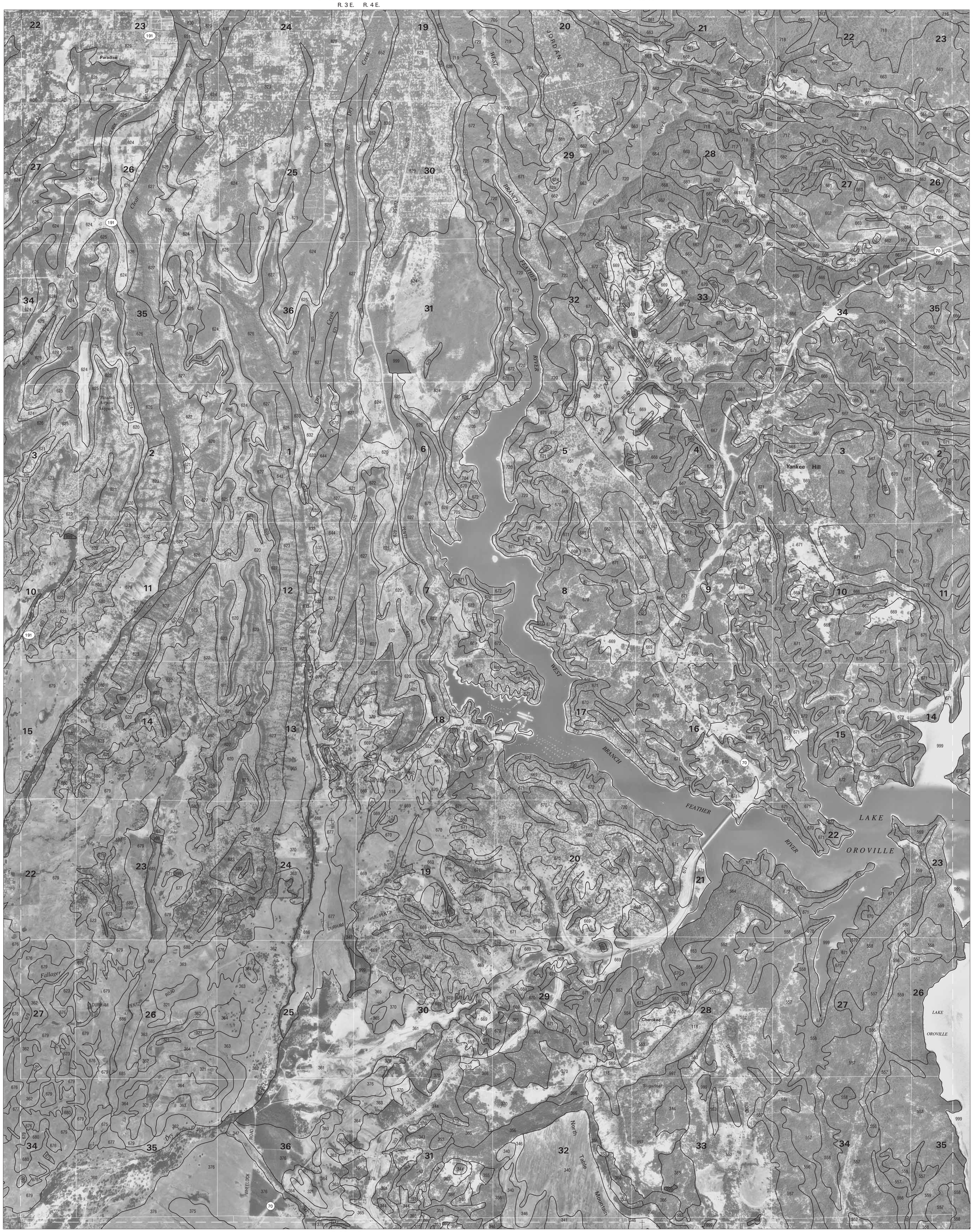
1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

BUTTE MEADOWS, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 2 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

CHEROKEE, CALIFORNIA

7.5 MINUTE SERIES
SHEET NUMBER 20 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES BERRY CREEK QUADRANGLE SHEET NUMBER 21 OF 43

Joins sheet 14, Paradise East

Joins sheet 15, Pulga

121° 30′ 00″ | 121° 27′ 30″ | 121° 25′ 00″ | 121° 22′ 30″

R. 4 E. R. 5 E.

39° 45′ 00″ | 39° 42′ 30″ | 39° 40′ 00″ | 39° 37′ 30″

T. 22 N. T. 21 N. T. 20 N.

PLUMAS NATIONAL FOREST

LASSEN NATIONAL FOREST

LAKE OROVILLE

Jarbo Gap

Bloomer Hill

Berry Creek

Big Ridge

Joins sheet 20, Cherokee

Joins sheet 22, Brush Creek

Joins sheet 28, Oroville

Joins sheet 29, Oroville Dam

Joins sheet 30, Forbestown

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

BERRY CREEK, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 21 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF
BUTTE & PLUMAS COUNTIES
BRUSH CREEK QUADRANGLE
SHEET NUMBER 22 OF 43

Joins sheet 15, Pulga

121°22′30″ 121°20′00″ 121°17′30″ 121°15′00″

R. 5 E. R. 6 E.

39°45′00″ 39°42′30″ 39°40′00″ 39°37′30″

T. 22 N.
T. 21 N.
T. 20 N.

PLUMAS
NATIONAL
FOREST

Joins sheet 21, Berry Creek

Joins sheet 23, Cascade

Joins sheet 29, Oroville Dam

Joins sheet 30, Forbestown

Joins sheet 31, Clipper Mills

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

BRUSH CREEK, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 22 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
CASCADE QUADRANGLE
SHEET NUMBER 23 OF 43

Joins sheet 16, Dogwood Peak

121°15′00″ 121°12′30″ 121°10′00″ 121°07′30″

R. 7 E. R. 8 E.

39°45′00″ 39°42′30″ 39°40′00″ 39°37′30″

T. 22 N.
T. 21 N.
T. 20 N.

PLUMAS NATIONAL FOREST

LIMIT OF SOIL SURVEY

PLUMAS COUNTY / BUTTE COUNTY

Cascade Creek
Lava Top
Greenwell Saddle
Quartz Hill
Fry Creek
Kenebeck Creek
KENEBECK RIDGE
LUMPKIN RIDGE
Fall River
Rock Creek
Coyote Creek
Bonnor Road
Lava Creek
Pinehurst Creek

Joins sheet 22, Brush Creek
Joins sheet 24, American House
Joins sheet 30, Forbestown
Joins sheet 31, Clipper Mills
Joins sheet 32, Strawberry Valley

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

CASCADE, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 23 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES AMERICAN HOUSE QUADRANGLE SHEET NUMBER 24 OF 43

121° 07′ 30″ | 121° 05′ 00″ | 121° 02′ 30″ | 121° 00′ 00″

Joins sheet 16, Dogwood Peak

R. 8 E. R. 9 E.

39° 45′ 00″ | 39° 42′ 30″ | 39° 40′ 00″ | 39° 37′ 30″

T. 22 N. | T. 21 N. | T. 20 N.

PLUMAS NATIONAL FOREST

Camel Peak

Lava Creek

Cascade Creek

Pinchard Creek

South Branch Middle Fork Feather River

Fall River

Davis Creek

Lumpkin Ridge

McNair Saddle

Post Office Ridge

Full Survey Ridge

Study Butte Creek

Limit of Soil Survey

Road

Joins sheet 23, Cascade

Joins sheet 31, Clipper Mills

Joins sheet 32, Strawberry Valley

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

AMERICAN HOUSE, CALIFORNIA

7.5 MINUTE SERIES
SHEET NUMBER 24 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
LLANO SECO QUADRANGLE (OVERSIZED)
SHEET NUMBER 25 OF 43

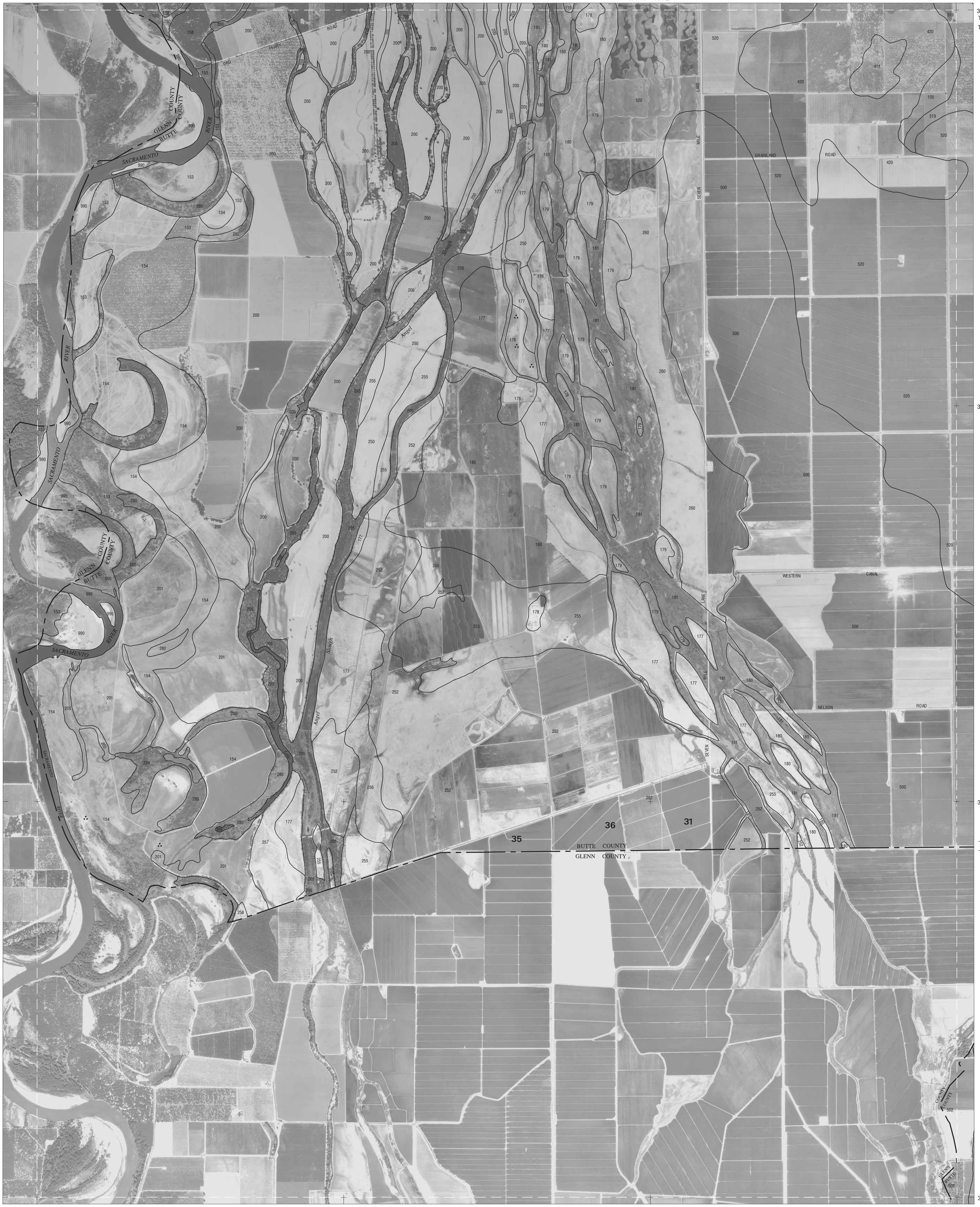
Joins sheet 18, Chico

122°00′00″ 121°57′30″ 121°55′00″ R. 1 W. R. 1 E. 121°52′30″

Joins sheet 17, Ord Ferry

39°37′30″ 39°35′00″ 39°32′30″ 39°30′00″

T. 21 N.
T. 20 N.
T. 19 N.



Joins sheet 26, Nelson

Joins sheet 33, Butte City

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

Joins sheet 34, West of Biggs

LLANO SECO (OVERSIZED), CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 25 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES NELSON QUADRANGLE SHEET NUMBER 26 OF 43

Joins sheet 17, Ord Ferry
Joins sheet 18, Chico
Joins sheet 19, Hamlin Canyon
Joins sheet 25, Llano Seco
Joins sheet 27, Shippee
Joins sheet 33, Butte City
Joins sheet 34, West of Biggs
Joins sheet 35, Biggs

121°52′30″ 121°50′00″ 121°47′30″ 121°45′00″

39°37′30″ 39°35′00″ 39°32′30″ 39°30′00″

T. 21 N.
T. 20 N.
T. 19 N.

R. 1 E. R. 2 E.

BUTTE COUNTY
GLENN COUNTY

GRAINLAND ROAD
FRIAS ROAD
AGUAS ROAD
WESTERN CANAL
NELSON ROAD
MIDWAY SOUTHERN PACIFIC
Butte Creek
Hamlin Slough
Little Dry Creek
Nelson

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

NELSON, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 26 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
SHIPPEE QUADRANGLE
SHEET NUMBER 27 OF 43

Joins sheet 18, Chico
Joins sheet 19, Hamlin Canyon
Joins sheet 20, Cherokee
Joins sheet 26, Nelson
Joins sheet 28, Oroville
Joins sheet 34, West of Biggs
Joins sheet 35, Biggs
Joins sheet 36, Palermo

121° 45′ 00″ | 121° 42′ 30″ | 121° 40′ 00″ | 121° 37′ 30″

39° 37′ 30″ — T. 21 N. / T. 20 N.

39° 35′ 00″

39° 32′ 30″ — T. 20 N. / T. 19 N.

39° 30′ 00″

R. 2 E. R. 3 E.

SCALE 1:24000

MILES: 1 0 1

FEET: 1000 0 1000 2000 3000 4000 5000 6000 7000

KILOMETERS: 1 0 1

NORTH

QUADRANGLE LOCATION

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

SHIPPEE, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 27 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
OROVILLE QUADRANGLE
SHEET NUMBER 28 OF 43

121°37′30″ 121°35′00″ 121°32′30″ 121°30′00″

39°37′30″ 39°35′00″ 39°32′30″ 39°30′00″

R. 3 E. R. 4 E.

T. 20 N.
T. 19 N.

NORTH TABLE MOUNTAIN

South Table Mountain

COTTONWOOD

Thermalito

Oroville

South Oroville

FOREBAY

THERMALITO

Thermalito Diversion Pool

FEATHER RIVER

Gold Run

Campbell Creek

Little Cottonwood Creek

CLARK ROAD

NELSON AVENUE

PACIFIC

UNION

CHEROKEE

DAM

EAST ROBINSON ROAD

NORTH MYERS

SOUTH MYERS

149 70 191 162

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

OROVILLE, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 28 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES OROVILLE DAM QUADRANGLE

SHEET NUMBER 29 OF 43

Joins sheet 20, Cherokee

Joins sheet 21, Berry Creek

Joins sheet 22, Brush Creek

121° 30′ 00″ | 121° 27′ 30″ | 121° 25′ 00″ | 121° 22′ 30″

R. 4 E. R. 5 E.

39° 37′ 30″ | 39° 35′ 00″ | 39° 32′ 30″ T. 20 N. T. 19 N. | 39° 30′ 00″

Joins sheet 28, Oroville

Joins sheet 30, Forbestown

Joins sheet 36, Palermo

Joins sheet 37, Bangor

Joins sheet 38, Rackerby

NORTH FORK FEATHER RIVER

LAKE OROVILLE

FEATHER RIVER

MIDDLE FORK FEATHER RIVER

SOUTH FORK FEATHER RIVER

Mount Hope

North Bidwell Hill

South Bidwell Hill

Union Hill

Oregon Gulch

Stringtown Mountain

Lake Wyandotte

Miners Ranch Reservoir

OROVILLE DAM

Big Ridge

Big Ridge Road

Big East Fork Ridge Road

Big Canyon Creek

Bridle Creek

Quincy Creek

Quincy Canyon

Sycamore Creek

Lovelor Creek

North Honcut Creek

Stringtown Road

Dam Road

Table Mountain Boulevard

Oroville Dam Boulevard

Feather River Fish Barrier Dam

Feather River Diversion Power Canal

Oroville Wyandotte Canal

Table Mountain Ditch

Table Mountain Flume

Table Mountain Tunnel

Table Mountain Penstock

Table Mountain Power Canal

Table Mountain Forebay

Table Mountain Afterbay

Table Mountain Power Plant

Table Mountain Switchyard

Table Mountain Transformer

Table Mountain Substation

Table Mountain Transmission Line

Table Mountain Access Road

Table Mountain Service Road

Table Mountain Maintenance Road

Table Mountain Recreation Area

Table Mountain Campground

Table Mountain Picnic Area

Table Mountain Boat Launch

Table Mountain Marina

Table Mountain Visitor Center

Table Mountain Museum

Table Mountain Interpretive Center

Table Mountain Trail

Table Mountain Bike Trail

Table Mountain Horse Trail

Table Mountain Hiking Trail

Table Mountain Nature Trail

Table Mountain Scenic Overlook

Table Mountain Viewpoint

Table Mountain Lookout

Table Mountain Fire Station

Table Mountain Ranger Station

Table Mountain Police Station

Table Mountain Sheriff Station

Table Mountain Hospital

Table Mountain Clinic

Table Mountain Medical Center

Table Mountain Emergency Room

Table Mountain Urgent Care

Table Mountain Pharmacy

Table Mountain Grocery Store

Table Mountain Gas Station

Table Mountain Restaurant

Table Mountain Hotel

Table Mountain Motel

Table Mountain Lodge

Table Mountain Resort

Table Mountain Golf Course

Table Mountain Tennis Court

Table Mountain Swimming Pool

Table Mountain Ski Area

Table Mountain Ski Lift

Table Mountain Ski Trail

Table Mountain Snowmobile Trail

Table Mountain Cross-Country Ski Trail

Table Mountain Snowshoe Trail

Table Mountain Ice Skating Rink

Table Mountain Hockey Rink

Table Mountain Curling Rink

Table Mountain Bowling Alley

Table Mountain Movie Theater

Table Mountain Concert Hall

Table Mountain Opera House

Table Mountain Theater

Table Mountain Art Gallery

Table Mountain Museum

Table Mountain Library

Table Mountain School

Table Mountain College

Table Mountain University

Table Mountain Church

Table Mountain Cemetery

Table Mountain Post Office

Table Mountain Bank

Table Mountain ATM

Table Mountain Credit Union

Table Mountain Savings and Loan

Table Mountain Insurance Agency

Table Mountain Real Estate Office

Table Mountain Law Office

Table Mountain Accounting Office

Table Mountain Dentist Office

Table Mountain Doctor Office

Table Mountain Veterinarian Office

Table Mountain Pet Store

Table Mountain Florist

Table Mountain Hardware Store

Table Mountain Lumber Yard

Table Mountain Nursery

Table Mountain Garden Center

Table Mountain Farm Supply Store

Table Mountain Feed Store

Table Mountain Seed Store

Table Mountain Fertilizer Store

Table Mountain Pesticide Store

Table Mountain Herbicide Store

Table Mountain Fungicide Store

Table Mountain Insecticide Store

Table Mountain Rodenticide Store

Table Mountain Animal Control Office

Table Mountain Animal Shelter

Table Mountain Animal Hospital

Table Mountain Animal Clinic

Table Mountain Animal Grooming Salon

Table Mountain Animal Boarding Kennel

Table Mountain Animal Training School

Table Mountain Animal Rescue Organization

Table Mountain Animal Adoption Center

Table Mountain Animal Foster Home

Table Mountain Animal Sanctuary

Table Mountain Animal Park

Table Mountain Animal Zoo

Table Mountain Animal Aquarium

Table Mountain Animal Circus

Table Mountain Animal Rodeo

Table Mountain Animal Fair

Table Mountain Animal Show

Table Mountain Animal Competition

Table Mountain Animal Race

Table Mountain Animal Parade

Table Mountain Animal Festival

Table Mountain Animal Celebration

Table Mountain Animal Memorial

Table Mountain Animal Cemetery

Table Mountain Animal Crematorium

Table Mountain Animal Funeral Home

Table Mountain Animal Taxidermy

Table Mountain Animal Rendering Plant

Table Mountain Animal Slaughterhouse

Table Mountain Animal Meat Packing Plant

Table Mountain Animal Processing Plant

Table Mountain Animal Feedlot

Table Mountain Animal Dairy Farm

Table Mountain Animal Poultry Farm

Table Mountain Animal Egg Farm

Table Mountain Animal Hatchery

Table Mountain Animal Breeding Farm

Table Mountain Animal Stud Farm

Table Mountain Animal Ranch

Table Mountain Animal Pasture

Table Mountain Animal Grazing Land

Table Mountain Animal Range Land

Table Mountain Animal Forage Land

Table Mountain Animal Hay Field

Table Mountain Animal Silage Field

Table Mountain Animal Corn Field

Table Mountain Animal Soybean Field

Table Mountain Animal Wheat Field

Table Mountain Animal Barley Field

Table Mountain Animal Oat Field

Table Mountain Animal Rye Field

Table Mountain Animal Sorghum Field

Table Mountain Animal Millet Field

Table Mountain Animal Alfalfa Field

Table Mountain Animal Clover Field

Table Mountain Animal Timothy Field

Table Mountain Animal Grass Field

Table Mountain Animal Pasture Land

Table Mountain Animal Range Land

Table Mountain Animal Forage Land

Table Mountain Animal Hay Field

Table Mountain Animal Silage Field

Table Mountain Animal Corn Field

Table Mountain Animal Soybean Field

Table Mountain Animal Wheat Field

Table Mountain Animal Barley Field

Table Mountain Animal Oat Field

Table Mountain Animal Rye Field

Table Mountain Animal Sorghum Field

Table Mountain Animal Millet Field

Table Mountain Animal Alfalfa Field

Table Mountain Animal Clover Field

Table Mountain Animal Timothy Field

Table Mountain Animal Grass Field

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

OROVILLE DAM, CALIFORNIA

7.5 MINUTE SERIES

SHEET NUMBER 29 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES VINA QUADRANGLE SHEET NUMBER 3 OF 43

122° 07′ 30″ | 122° 05′ 00″ | 122° 02′ 30″ | 122° 00′ 00″

R. 2 W. R. 1 W.

40° 00′ 00″

T. 25 N.
T. 24 N.

39° 57′ 30″

39° 55′ 00″

T. 24 N.
T. 23 N.

39° 52′ 30″

Joins sheet 4, Richardson Springs NW

Joins sheet 10, Foster Island

Joins sheet 11, Nord

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

VINA, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 3 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES FORBESTOWN QUADRANGLE SHEET NUMBER 30 OF 43

Joins sheet 21, Berry Creek
Joins sheet 22, Brush Creek
Joins sheet 23, Cascade
Joins sheet 29, Oroville Dam
Joins sheet 31, Clipper Mills
Joins sheet 37, Bangor
Joins sheet 38, Rackerby

121°22′30″ 121°20′00″ 121°17′30″ 121°15′00″

39°37′30″ 39°35′00″ T. 20 N. 39°32′30″ T. 19 N. 39°30′00″

R. 5 E. R. 6 E.

PLUMAS NATIONAL FOREST

LAKE OROVILLE

OROVILLE MIDDLE FORK FEATHER RIVER

SOUTH FORK FEATHER RIVER

Island Bar

Kanaka Peak

Ridge

Lumpkin

Feather Falls

Moretown

Crystal Hill

Rocky Point Peak

Oregon Gulch

Sucker Run

Little Sucker Run

Ponderosa Reservoir DAM

Sunset Hill

Forbestown

Forbestown Road

Lumpkin Road

Rockefeller Road

Bean Creek

Bean Ridge Road

Powell Creek

Butte County

Yuba County

Limit of soil survey

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

FORBESTOWN, CALIFORNIA

7.5 MINUTE SERIES
SHEET NUMBER 30 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF
BUTTE & PLUMAS COUNTIES
CLIPPER MILLS QUADRANGLE
SHEET NUMBER 31 OF 43

121°15′00″ 121°12′30″ 121°10′00″ 121°07′30″

R. 6 E. R. 7 E. R. 7 E. R. 8 E.

39°37′30″ 39°35′00″ T. 20 N. 39°32′30″ T. 19 N. 39°30′00″

PLUMAS NATIONAL FOREST

Swain Hill
Feather Falls
Sugar Pine Point
Jackass Flat
Clipper Mills
RIDGE
LUMPKIN ROAD
MOOREVILLE RIDGE
FIELDS RIDGE
FORBESTOWN ROAD
LA PORTE ROAD
Lost Creek Reservoir
Rackerby
Oroleve Creek
Woodleaf Creek
Grizzly Creek
Onyx Creek
Sucker Run
Winters Creek
Rocky Gulch
Pulford Ridge
Lewis Ridge
Lost Creek
Creek
Run
SOIL SURVEY
LIMIT OF SOIL SURVEY
BUTTE COUNTY
YUBA COUNTY

Joins sheet 30, Forbestown

Joins sheet 32, Strawberry Valley

Joins sheet 38, Rackerby

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

CLIPPER MILLS, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 31 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF
BUTTE & PLUMAS COUNTIES
STRAWBERRY VALLEY QUADRANGLE
SHEET NUMBER 32 OF 43

Joins sheet 24, American House

121° 07′ 30″ | 121° 05′ 00″ | 121° 02′ 30″ | 121° 00′ 00″

R. 8 E. R. 9 E.

39° 37′ 30″

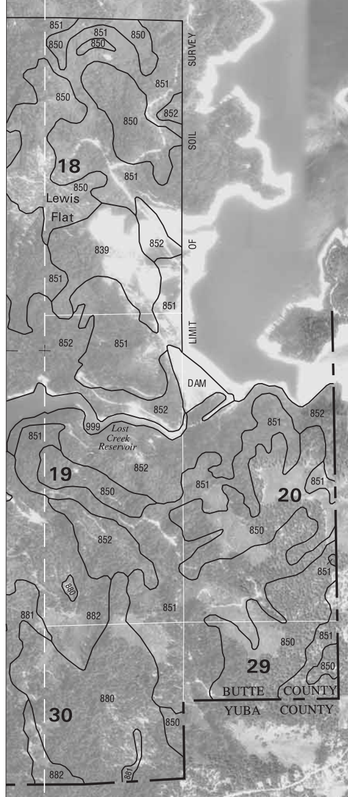
39° 35′ 00″

39° 32′ 30″

39° 30′ 00″

Joins sheet 31, Clipper Mills

T. 20 N.
T. 19 N.



NATIONAL FOREST

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES: 1 0 1

FEET: 1000 0 1000 2000 3000 4000 5000 6000 7000

KILOMETERS: 1 0 1

STRAWBERRY VALLEY, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 32 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
BUTTE CITY QUADRANGLE
SHEET NUMBER 33 OF 43

Joins sheet 26, Nelson

122°00′00″ 121°57′30″ 121°55′00″ 121°52′30″

Joins sheet 25, Llano Seco

R. 1 W. R. 1 E.

39°30′00″ 39°27′30″ 39°25′00″ 39°22′30″

T. 19 N.
T. 18 N.

Joins sheet 34, West of Biggs

Joins sheet 39, Sanborn Slough

Joins sheet 40, Pennington

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

BUTTE CITY, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 33 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES WEST OF BIGGS QUADRANGLE

SHEET NUMBER 34 OF 43

Joins sheet 25, Llano Seco
Joins sheet 26, Nelson
Joins sheet 27, Shippee
Joins sheet 33, Butte City
Joins sheet 35, Biggs
Joins sheet 39, Sanborn Slough
Joins sheet 40, Pennington
Joins sheet 41, Gridley

121°52′30″ 121°50′00″ 121°47′30″ 121°45′00″

39°30′00″ 39°27′30″ 39°25′00″ 39°22′30″

R. 1 E. R. 2 E.

T. 19 N.
T. 18 N.

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

WEST OF BIGGS, CALIFORNIA

7.5 MINUTE SERIES
SHEET NUMBER 34 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF
BUTTE & PLUMAS COUNTIES
BIGGS QUADRANGLE
SHEET NUMBER 35 OF 43

121° 45′ 00″ | 121° 42′ 30″ | 121° 40′ 00″ | 121° 37′ 30″

Joins sheet 27, Shippee

R. 2 E. R. 3 E.

39° 30′ 00″ | 39° 27′ 30″ | T. 19 N. / T. 18 N. | 39° 25′ 00″ | 39° 22′ 30″

Joins sheet 34, West of Biggs

Joins sheet 36, Palermo

Richvale
Oroville Municipal Airport
THERMALITO
AFTERBAY
OROVILLE WILDLIFE AREA
Biggs
MIDWAY
SOUTHERN PACIFIC CANAL
RICHVALE HIGHWAY
CHEROKEE ROAD
AFTON ROAD
FARRIS ROAD
GRIDLEY ROAD
BIGGS WEST ROAD
LARKIN ROAD
FEATHER RIVER
ROAD 997

Joins sheet 40, Pennington

R. 2 E. R. 3 E.

Joins sheet 41, Gridley

Joins sheet 42, Honcut

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

BIGGS, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 35 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
PALERMO QUADRANGLE
SHEET NUMBER 36 OF 43

Joins sheet 27, Shippee
Joins sheet 28, Oroville
Joins sheet 29, Oroville Dam
Joins sheet 35, Biggs
Joins sheet 37, Bangor
Joins sheet 41, Gridley
Joins sheet 42, Honcut
Joins sheet 43, Loma Rica

121°37′30″ 121°35′00″ 121°32′30″ 121°30′00″

39°30′00″ 39°27′30″ 39°25′00″ 39°22′30″

R. 3 E. R. 4 E.

T. 19 N.
T. 18 N.

Thermalito
Oroville Municipal Airport
South Oroville
OROVILLE
WILDLIFE AREA
Palermo
Wyandotte Creek

ROAD
PACIFIC
WESTERN
FEATHER RIVER
LARKIN
BOULEVARD
FOOTHILL
OLIVE
DIPHIR
WYANDOTTE
TREE
LONE
PALERMO
UPPER
COX
LANE
HONCUT
HIGHWAY

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

PALERMO, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 36 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
BANGOR QUADRANGLE
SHEET NUMBER 37 OF 43

Joins sheet 28, Oroville
Joins sheet 30, Forbestown
Joins sheet 29, Oroville Dam
Joins sheet 36, Palermo
Joins sheet 38, Rackerby
Joins sheet 42, Honcut
Joins sheet 43, Loma Rica

121°30′00″ 121°27′30″ 121°25′00″ 121°22′30″

39°30′00″ 39°27′30″ 39°25′00″ 39°22′30″

R. 4 E. R. 5 E.

T. 19 N.
T. 18 N.

Hurleton
Phoenix Hill
Rattlesnake Point
Wyandotte
Miller Hill
Parks Hill
Bangor

ROAD
DRIVE
HIGHWAY
LANE
Creek
Honcut
North Honcut Creek
Dry Creek
Wyandotte Creek
Lower Wyandotte Creek
Rocky Honcut Creek
Dunstone Creek
Miners Ranch Creek
La Porte Creek

SCALE 1:24000

1 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 0 1 KILOMETERS

NORTH

QUADRANGLE LOCATION

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

BANGOR, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 37 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES RACKERBY QUADRANGLE SHEET NUMBER 38 OF 43

121°22′30″ 121°20′00″ 121°17′30″ 121°15′00″

Joins sheet 30, Forbestown

R. 5 E. R. 6 E.

39°30′00″ 39°27′30″ 39°25′00″ 39°22′30″

T. 19 N.
T. 18 N.

Joins sheet 37, Bangor

Joins sheet 43, Loma Rica

BUTTE COUNTY
YUBA COUNTY

FORBESTOWN ROAD
ROBINSON MILL ROAD
LA PORTE ROAD
Parks Hill

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

RACKERBY, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 38 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES SANBORN SLOUGH QUADRANGLE SHEET NUMBER 39 OF 43

Joins sheet 34, West of Biggs

122°00′00″ 121°57′30″ 121°55′00″ 121°52′30″

Joins sheet 33, Butte City

R. 1 W. R. 1 E.

39°22′30″ T. 18 N. T. 17 N.

39°20′00″

39°17′30″ T. 17 N. T. 16 N.

39°15′00″

Joins sheet 40, Pennington

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

SANBORN SLOUGH, CALIFORNIA

7.5 MINUTE SERIES
SHEET NUMBER 39 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

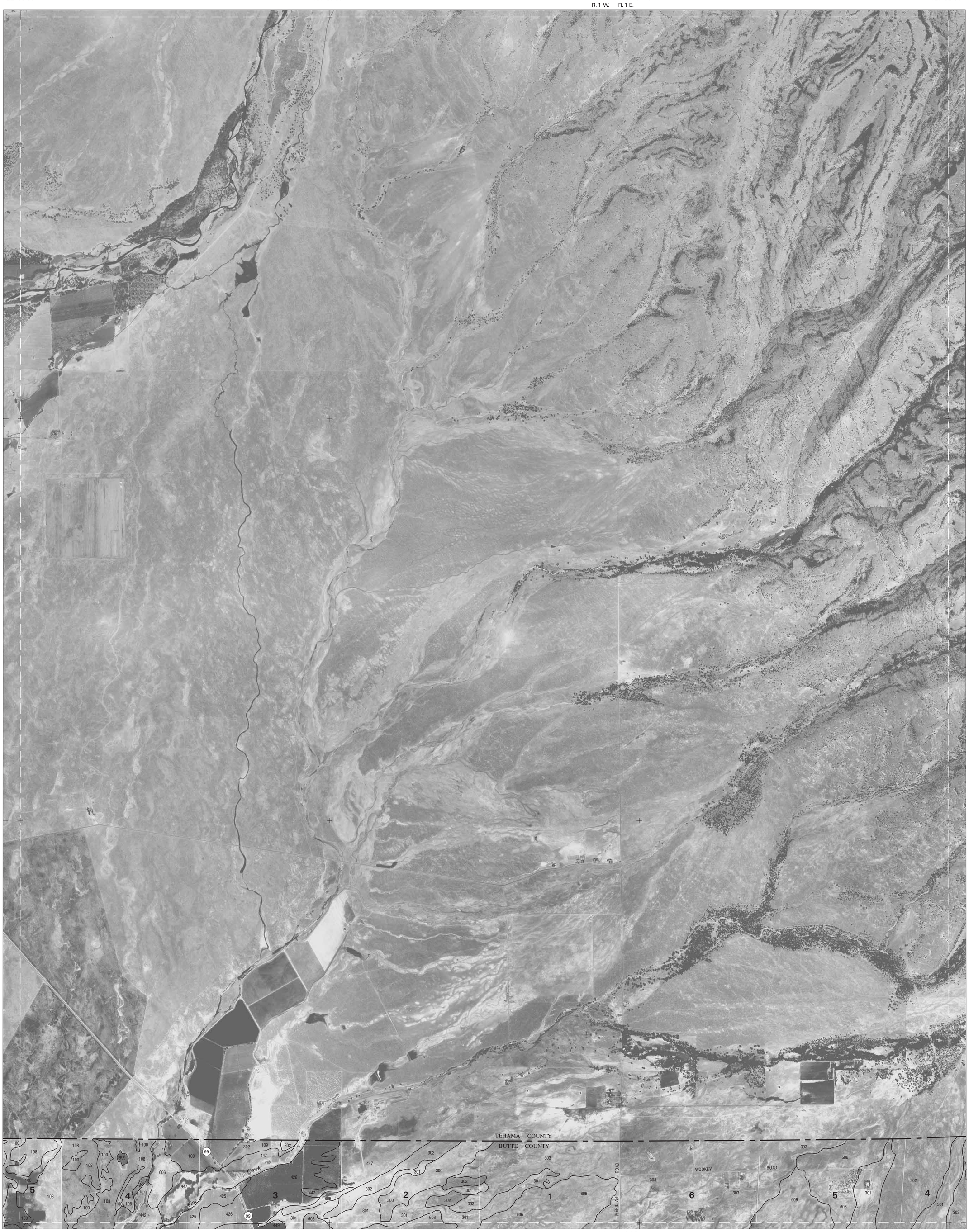
BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES RICHARDSON SPRINGS NW QUADRANGLE SHEET NUMBER 4 OF 43

122°00′00″ 121°57′30″ 121°55′00″ 121°52′30″

R. 1 W. R. 1 E.

40°00′00″ 39°57′30″ 39°55′00″ 39°52′30″

T. 25 N.
T. 24 N.
T. 23 N.



Joins sheet 3, Vina

Joins sheet 5, Campbell Mound

Joins sheet 10, Foster Island

Joins sheet 11, Nord

Joins sheet 12, Richardson Springs

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

RICHARDSON SPRINGS NW, CALIFORNIA

7.5 MINUTE SERIES
SHEET NUMBER 4 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
PENNINGTON QUADRANGLE
SHEET NUMBER 40 OF 43

Joins sheet 33, Butte City
Joins sheet 34, West of Biggs
Joins sheet 35, Biggs
Joins sheet 39, Sanborn Slough
Joins sheet 41, Gridley

121°52′30″ 121°50′00″ 121°47′30″ 121°45′00″
R. 1 E. R. 2 E.
39°22′30″ 39°20′00″ 39°17′30″ 39°15′00″
T. 18 N. T. 17 N. T. 16 N.

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

PENNINGTON, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 40 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
GRIDLEY QUADRANGLE
SHEET NUMBER 41 OF 43

Joins sheet 34, West of Biggs

Joins sheet 35, Biggs

Joins sheet 36, Palermo

Joins sheet 40, Pennington

Joins sheet 42, Honcut

121°45′00″ 121°42′30″ 121°40′00″ 121°37′30″

39°22′30″ 39°20′00″ 39°17′30″ 39°15′00″

R. 2 E. R. 3 E.

T. 18 N.
T. 17 N.
T. 16 N.

BUTTE COUNTY
SUTTER COUNTY

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

GRIDLEY, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 41 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
HONCUT QUADRANGLE
SHEET NUMBER 42 OF 43

Joins sheet 35, Biggs
Joins sheet 36, Palermo
Joins sheet 37, Bangor
Joins sheet 41, Gridley
Joins sheet 43, Loma Rica

121°37′30″ 121°35′00″ 121°32′30″ 121°30′00″
R. 3 E. R. 4 E.
39°22′30″ 39°20′00″ 39°17′30″ 39°15′00″
T. 18 N. T. 17 N. T. 16 N.

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

HONCUT, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 42 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES LOMA RICA QUADRANGLE (OVERSIZED) SHEET NUMBER 43 OF 43

Joins sheet 36, Palermo

Joins sheet 37, Bangor

Joins sheet 38, Rackerby

Joins sheet 42, Honcut

121°30′00″ 121°27′30″ 121°25′00″ 121°22′30″

39°22′30″ 39°20′00″ 39°17′30″ 39°15′00″

R. 4 E. R. 5 E.

T. 18 N.
T. 17 N.
T. 17 N.
T. 16 N.

Swain Hill

BUTTE COUNTY
YUBA COUNTY

LA PORTE ROAD

DRIVE

Creek

North

DUNSTONE ROAD

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

LOMA RICA (OVERSIZED), CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 43 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

S3912145IMG.MAP [Black]

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES CAMPBELL MOUND QUADRANGLE SHEET NUMBER 5 OF 43

Joins sheet 1, Devils Parade Ground

121°52′30″ 121°50′00″ 121°47′30″ 121°45′00″

R. 1 E. R. 2 E.

40°00′00″

T. 25 N.
T. 24 N.

39°57′30″

39°55′00″

39°52′30″

Joins sheet 4, Richardson Springs NW

Joins sheet 6, Cohasset

Joins sheet 11, Nord

Joins sheet 12, Richardson Springs

Joins sheet 13, Paradise West

TEHAMA COUNTY
BUTTE COUNTY

Creek
Rock
Fork
Ridge
Cohasset
Cohasset
Antelope

T. 24 N.
T. 23 1/2 N.
T. 23 N.

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

CAMPBELL MOUND, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 5 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
COHASSET QUADRANGLE
SHEET NUMBER 6 OF 43

Joins sheet 2, Butte Meadows

121° 45′ 00″ | 121° 42′ 30″ | 121° 40′ 00″ | 121° 37′ 30″

Joins sheet 1, Devils Parade Ground

R. 2 E. R. 3 E.

40° 00′ 00″ | 39° 57′ 30″ | 39° 55′ 00″ | 39° 52′ 30″

T. 25 N.
T. 24 N.
T. 24 N.
T. 23 1/2 N.
T. 23 N.

Joins sheet 5, Campbell Mound

Joins sheet 7, Stirling City

Joins sheet 12, Richardson Springs

Joins sheet 14, Paradise East

R. 2 E. R. 3 E.

Joins sheet 13, Paradise West

TEHAMA COUNTY
BUTTE COUNTY

Cohasset
Forest Ranch
Platte Mountain Lookout

Creek
Hollow
Rock
Road
Ridge
Branch
Mill
Butte
Way
Lane
Trail
Villas
Garland
Schott
Doe
Little
Ponderosa
Hinderook
Anderson
Cohasset
Gates
Buck
Musty
Chico
Mud
Fork
West
East
Middle
Big

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

COHASSET, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 6 OF 43

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES
STIRLING CITY QUADRANGLE
SHEET NUMBER 7 OF 43

Joins sheet 1, Devils Parade Ground

121°37′30″ 121°35′00″ 121°32′30″ 121°30′00″

R. 3 E. R. 4 .E

40°00′00″ 39°57′30″ 39°55′00″ 39°52′30″

T. 25 N.
T. 24 N.
T. 24 N.
T. 23 N.

Joins sheet 2, Butte Meadows

Joins sheet 6, Cohasset

Joins sheet 8, Kimshew Point

Joins sheet 13, Paradise West

Joins sheet 14, Paradise East

Joins sheet 15, Pulga

LASSEN NATIONAL FOREST

SURVEY LIMIT

CARPENTER RIDGE

Gold Hill

Inskip

Powellton

Forks of Butte

Stirling City

Lovelock

Toadtown

De Sabla

Lake De Sabla

Butte Creek

Butte Creek Branch

West Branch Feather River

Clear Creek

Dogwood Creek

Fish Lake

Portuguese Point

Little Butte Creek

Kanaka Creek

Kimshew Creek

Transfer Ridge

SKYWAY

RESON ROAD

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

STIRLING CITY, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 7 OF 43

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF BUTTE & PLUMAS COUNTIES KIMSHEW POINT QUADRANGLE SHEET NUMBER 8 OF 43

121°30′00″ 121°27′30″ 121°25′00″ 121°22′30″

R. 4 E. R. 5 E.

40°00′00″

39°57′30″

39°55′00″

39°52′30″

T. 25 N.
T. 24 N.
T. 24 N.
T. 23 N.

LASSEN NATIONAL FOREST

PLUMAS NATIONAL FOREST

BUTTE COUNTY
PLUMAS COUNTY

SOIL SURVEY LIMIT OF

Bald Mountain

Oak Point

Ramsey Bar

RIDGE

Creek
Valley
Canyon
Ridge

Joins sheet 7, Stirling City

Joins sheet 9, Storrie

Joins sheet 14, Paradise East

Joins sheet 15, Pulga

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North American Datum of 1983 (NAD83), GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

KIMSHEW POINT, CALIFORNIA

7.5 MINUTE SERIES
SHEET NUMBER 8 OF 43

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UNITED STATES
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NATURAL RESOURCES CONSERVATION SERVICE

BUTTE AREA, CALIFORNIA, PARTS OF
BUTTE & PLUMAS COUNTIES
STORRIE QUADRANGLE
SHEET NUMBER 9 OF 43

121°22′30″ 121°20′00″ 121°17′30″ 121°15′00″

R. 5 E. R. 6 E.

40°00′00″

T. 25 N.
T. 24 N.

39°57′30″

39°55′00″

T. 24 N.
T. 23 N.

39°52′30″

LASSEN NATIONAL FOREST

PLUMAS NATIONAL FOREST

SURVEY AREA BOUNDARY

Joins sheet 8, Kimshew Point

Joins sheet 15, Pulga

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North American Datum of 1983 (NAD83). GRS-80 Spheriod 1000-meter ticks: Universal Transverse Mercator, zone 10. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

STORRIE, CALIFORNIA
7.5 MINUTE SERIES
SHEET NUMBER 9 OF 43

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